



## **TRANS TECH CONSULTANTS**

*Environmental Compliance Services  
Engineers • Geologists • Planners  
License # 697833 (A-Haz)*

January 10, 2005

Job No. 1222.01

Edward and Margaret Gilmore  
27 Rancheria Road  
Kentfield, California 94904

**Subject: Results of Investigation / Additional Monitoring Wells**  
Royal Coach Car Wash / 7360 Commerce Blvd., Santa Rosa, California  
SCDHS-EHD Site # 00001357; NCRWQCB Site #1TSO509

Dear Mr. and Mrs. Gilmore:

This report presents the results of Trans Tech Consultants (TTC) investigation of the second encountered groundwater zone at the site. The subject site is approximately located as shown on the Site Location Map, Plate 1. The work performed was based on the results of the cone penetrometer test (CPT) investigations performed on September 16, 2003 and February 25, 2004 and recommendations made in our April 15, 2004 Summary Report of Investigation. A significant level of groundwater impact in the second encountered groundwater zone had previously been detected and our work was performed to further evaluate the extent of the deeper impact. Our work was also performed to determine a groundwater flow direction, and to provide fixed sampling points to monitor contaminant trends over time. The scope of work performed was in substantial compliance with requests outlined in a May 12, 2004 letter from Mr. Dale Radford P.E. of the Sonoma County Department of Health Services, Division of Environmental Health (SCDHS-DEH).

### **Site Description**

The site is located in an area of commercial and residential development. The site is bounded to the west by Commerce Boulevard, to the south by a restaurant, to the east by a new housing development, and to the north by a flood control channel. The site is used as a gasoline station and car wash facility.

Published geologic data indicates the site is underlain by Quaternary-age interfluvial deposits. Our work in the relatively shallow soils indicates the deposits consist mainly of clay and silty clay, both presumably rich in organic matter, with some interbedded sand.

## **Background**

We understand that in February 1992, Petro Tech of Santa Rosa, California, upgraded the product line piping that extends from the three existing underground storage tanks (USTs) to the two pump islands. On February 20, 1992, Petro Tech collected five soil samples 30 inches below ground surface (BGS), from the bottom of the trench excavations. The soil samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline and benzene, toluene, ethylbenzene, and xylenes (BTEX). TPH as gasoline was detected as high as 1,500 milligrams per kilogram (mg/Kg) in the soil samples. On May 3, 1993, TTC conducted a preliminary site investigation consisting of drilling five soil borings adjacent to the soil sample locations by Petro Tech. We observed Clear Heart Drilling of Santa Rosa, California (Clear Heart) advance borings B-1 through B-5, at the approximate locations indicated on the Site Plan, Plate 2. Twelve soil samples and two grab groundwater samples were obtained for laboratory chemical analysis. The results of the investigation were presented in the TTC Summary Report of Investigations dated June 2, 1993. The laboratory chemical results of the soil samples are presented in Appendix A and groundwater sample results are presented in Appendix B.

On February 22, 23 and 24, 1994, TTC conducted a fuel release investigation consisting of drilling twelve soil borings and converting five of the borings into groundwater monitoring wells. Clear Heart advanced borings B-6 through B-17 at the approximate locations indicated on Plate 2. Borings B-7, B-11, B-13, B-14, and B-17 were completed as 2-inch monitoring wells (MW-1 through MW-5). The wells were developed and sampled on February 28 and March 3, 1994, respectively. Soil samples obtained from the borings and groundwater samples obtained from the monitoring wells were submitted for laboratory chemical analysis. The results of the investigation were presented in the TTC Summary Report of Investigation dated May 16, 1994. The laboratory chemical results of the soil samples are presented in Appendix A and groundwater sample results are presented in Appendix B.

A subsequent June 17, 1996 Work Plan for a Phase 2 Investigation, which proposed additional onsite test borings and a monitoring well on Commerce Boulevard was submitted by BCW Environmental Consulting (BCW). In a June 26, 1996 letter, the SCDHS-EHD concurred with the scope of the work plan. Borings B-18 through B-20 were advanced on April 12, 2000, by Clear Heart at the approximate locations shown on Plate 2. On November 22, 2000, monitoring well MW-6 was installed by Weeks Drilling and Pump Company at the approximate location shown on Plate 2. The laboratory analytical results of the soil and groundwater samples collected during the investigation were presented in our January 9, 2001 Summary Report and are presented in Appendix A and B.

In April of 2002 TTC prepared a work plan to further assess the impact to soil and groundwater along the southwestern property boundary. The investigation was performed on August 20, 2002 and consisted of installing one 2" groundwater monitoring well (MW-7) at the approximate location shown on Plate 2. The analytical results of the investigation indicated that the southerly extent of



the soil and groundwater impact was not defined and that impact in MW-7 was significant. The analytical results of the soil and groundwater samples collected during the investigation were presented in our October 30, 2002 Summary Report and are tabulated in Appendix A and B.

On September 16, 2003, Gregg Drilling of Martinez, California performed two cone penetration tests (CPT's) at the approximate locations shown on Plate 2. The CPT's were advanced to approximately 70 feet BGS and groundwater samples were collected from a second water bearing zone identified between 46 and 53 feet BGS. The analytical results of the samples collected indicated that impact from petroleum hydrocarbons, including methyl tert butyl ether (MTBE) was being detected in the sample collected from the northern end of the site. The analytical results from the soil and groundwater samples collected during the investigation were presented in our November 5, 2003 Summary Report of Investigation and presented in Appendix C.

On October 3, 2003, Gregg Drilling advanced one soil boring (B-21) and completed one monitoring well (MW-8) at the approximate locations shown on Plate 2. One additional monitoring well was proposed but was not installed due to underground utility constraints. The analytical results of the soil and groundwater samples collected indicated that the lateral extent of MTBE was not completely defined to the north and that additional delineation efforts may be needed. The analytical results from the soil and groundwater samples collected during the investigation were presented in our November 5, 2003 Summary Report of Investigation and are tabulated in Appendix A and B.

On February 25, 2004 Gregg Drilling performed three CPT's at the approximate locations shown on Plate 2. The purpose of the CPT's was to confirm the results of the previous CPT sample analysis and to further delineate the lateral extent of impact in the deeper water bearing zone. The analytical results of the CPT investigation were reported in our April 15, 2004 Summary Report of Investigation and are tabulated in Appendix C.

On March 16, 2004, Gregg Drilling advanced two soil boring (B-22 and B-23) and one groundwater monitoring well (MW-9) at the approximate locations shown on Plate 2. The borings and well were drilled to further delineate the lateral extent of groundwater impact at the site in the vicinity of B-21, and south of MW-7. The analytical results of the soil and groundwater samples collected during the investigation were reported in our April 15, 2004 Summary Report of Investigations and are tabulated in Appendix A and B.

### **Field Activities**

Before proceeding with the proposed drilling activities Underground Service Alert was notified of our proposed drilling locations and start dates, and appropriate city and county permits were also obtained. From November 8 through November 12, and November 15, 2004 Gregg Drilling and a Registered Geologist from TTC were at the subject site to install three groundwater monitoring wells



(MW-1D through MW-3D) at the approximate locations shown on Plate 2. The monitoring wells were installed into a secondary aquifer previously sampled during both CPT investigations. The wells were installed to total depths between 56 and 58 feet BGS.

Using a Mobile B-51 Type drilling rig mounted with 6-inch hollow stem auger drilling equipment, pilot borings were first advanced to the approximate depth of 30 feet BGS. Soil samples were collected at approximately 10 feet BGS, 20 feet BGS and continuously from approximately 25 to 30 feet BGS in each boring/ monitoring well. Soil samples were collected for classification and laboratory analytical testing. Once the soil types were confirmed and the conductor casing depth was determined, the borehole was over-drilled with 14-inch hollow stem augers. A 9-inch steel conductor casing was then placed in the borehole and the annular space was tremie grouted with a concrete/ bentonite slurry. The conductor casing was set at approximately 31 feet BGS in all three wells. The grout was allowed to setup for approximately 24-36 hours before proceeding with the monitoring well installation. After the grout had setup, the wells were then drilled through the 9-inch metal conductor casing using 8-inch hollow stem augers.

During the over-drilling of MW-1DA, a 5-inch electrical conduit was encountered at approximately 4 feet BGS. The conduit was broken and water drained from the pipe. We immediately pumped the water from the borehole and decided to grout the hole, fix the pipe and move to an adjacent location. The boring was tremie grouted through the 6-inch augers. Economy Plumbing of Sonoma County mobilized to the site to perform the necessary repairs. The new location for MW-1D was within approximately 10-15 feet of MW-1DA. The shallow soil profile had been well characterized during previous investigations and from MW-1DA, therefore, soil samples were not collected from MW-1D between approximately 5 and 25 feet BGS. Continuous samples were collected from MW-1A from approximately 25 to 30 feet BGS to confirm the soil type for setting conductor casing.

As previously discussed, the shallow soils in the vicinity of the deep monitoring wells had been well characterized during previous investigations and therefore soil samples were collected as needed for classification purposes only. Soil samples for laboratory chemical analysis were collected from the approximate soil groundwater interface between each encountered groundwater zone. Our geologist observed the drilling procedures, classified the soils encountered and obtained the necessary soil samples. The soil samples were collected using a 2.0-inch inside diameter California modified split spoon sampler lined with clean stainless steel sample tubes. One soil sample per boring/ monitoring well was collected and preserved in the field in accordance with EPA 5035 protocols. Soil conditions encountered were classified in accordance with the Unified Soil Classification System and are presented graphically on the attached Boring Logs, Plates A-D. In general, the soil encountered consisted of a sandy gravelly fill material from just below the ground surface to approximately 4 feet BGS. The fill material was underlain by brownish grey silts and clays to approximately 18 feet BGS. The silts and clays were underlain to approximately 22-23 feet BGS by silty sands. Groundwater was first encountered within the silty sands encountered between



approximately 18 and 22 feet BGS. The silty sands were underlain to approximately 35-40 feet by dark grey hard clay. The clays encountered within this interval appeared relatively dry and appeared to create an adequate confining layer for setting the conductor casing. The hard grey clays were underlain to approximately 45 to 48 feet BGS by lenses of silt, clay and sand with some gravels. Limited groundwater was encountered within this zone. The lenses of silt, clay, and sand were underlain to approximately 55-58 feet BGS, the maximum depth explored, by fine grained sands with varying amounts of silt and gravel. Abundant water was encountered within the fine grain sands. Soil samples were also screened in the field using a photo ionization detector (PID) and results are presented on the Boring Logs.

Samples collected for laboratory chemical analysis were recovered in pre-cleaned stainless steel tubes. Upon recovery, one sample per boring was extracted from the tubes using an Encore type sample hammer and transferred into pre-tarred, preserved VOA Vials. The sample tubes were then capped with non-adhesive Teflon tape and plastic caps, labeled, placed on ice, and transported under chain-of-custody with the VOA vials to Analytical Sciences Laboratory in Petaluma, California.

Sampling equipment was cleaned with a phosphate free detergent solution and triple rinsed with de-ionized water between sampling events. Clean augers were used for each boring advanced. Approximately 10-12 yards of drill cuttings were generated from the investigation and was stored onsite in a covered metal container. The material was accepted at Redwood Landfill in Novato, California and was disposed on December 17, 2004. Disposal documentation is attached in Appendix D. Rinse water generated by the field investigation was contained and pumped into 55-gallon drums, pending disposal.

### **Monitoring Well Construction**

The groundwater monitoring wells were constructed in accordance with the attached Monitoring Well Construction Diagrams, Plates E, F, and G. Monitoring well MW-1D extends to a total depth of approximately 58 feet BGS, MW-2D extends to a total depth of approximately 55 feet BGS and MW-3D extends to a total depth of approximately 56 feet BGS. The wells were constructed of a 2.0-inch diameter, Schedule 40 PVC pipe. The screened portion of the wells has 0.020-inch machined slots and extend from the bottom of the wells to 48 feet BGS in MW-1D, 45 feet BGS in MW-2D, and 46 feet BGS in MW-3D. Blank casing was used for the remaining portion of the wells. The well casings extend to within 6-inches BGS and are fitted with waterproof locking caps. The sand pack extends from the bottom of the wells to approximately two feet above the screened interval. An approximate two foot bentonite seal was then placed above the sand pack, and the remainder of the wells annulus space were filled with a cement grout. The wells were protected by a traffic rated watertight circular vault installed approximately ½ inch above grade. An identifying marker will be placed on the underside of the vault lid, and the vault lid will be stamped with the well name.





### Monitoring Well Development and Sampling

The monitoring wells were developed by our staff on November 17, 2004. The wells were developed by bailing, surging and pumping until the produced water became relatively sediment free. Approximately 4.5 to 6 well casing volumes were removed from each well during development. The water was allowed to stabilize in the wells for approximately 2 days prior to measuring groundwater levels on November 19, 2004. After water levels had been measured, the wells were checked for the presence of free product using an oil-water interface probe. No free product was found during this sampling event. Before the wells were sampled, the wells were pumped until three to five well volumes have been removed and until successive measurement of the indicator parameters pH, temperature and conductivity had stabilized. The groundwater data collected during sampling was recorded on the attached Groundwater Field Sampling Forms, Appendix E. Groundwater samples were then obtained for laboratory chemical analysis using a new disposable bailer for each well. The water generated by development and sampling is stored onsite in 55-gallon drums, pending disposal.

### Gradient Determination

The top-of-casing (TOC) elevation was surveyed relative to an established datum onsite and relative to mean sea level (msl) on December 3, 2004. The location of the wells will also be surveyed utilizing Global Positioning Systems (GPS) to within sub-meter accuracy during the week of January 10, 2005. Water level measurements collected from all three wells was used with the survey data to evaluate the direction of groundwater flow and the slope of the potentiometric surface in the direction of flow. The top of casing (TOC) elevations, depths to groundwater, the groundwater elevation and the groundwater flow direction and gradient are tabulated below on Table 1. The data will also be submitted electronically to the State Water Resources Control Board Geotracker database as required by Title 23, Division 3, Chapter 16, Article 12 of the California Code of Regulations.

**Table 1 - Groundwater Elevation and Gradient Data**

Date	Well ID	TOC Elevation	Depth to Groundwater	Groundwater Elevation	Groundwater Flow Direction and Gradient (i)
11/19/04	MW-1D	99.11	15.51	83.60	N 75°W i = 0.03
	MW-2D	98.45	15.12	83.33	
	MW-3D	98.89	17.32	81.57	

Groundwater elevation contours from the November 2004 sampling event are shown on Plate 3.



### Laboratory Chemical Analysis

Two soil samples per monitoring were submitted for laboratory chemical analysis to Analytical Sciences of Petaluma, California. The samples were analyzed for TPH as gasoline, BTEX, and MTBE using EPA 8020, and for BTEX using EPA 8015M. Groundwater samples collected from the monitoring wells were analyzed for TPH as gasoline, BTEX, MTBE and the additional ether based oxygenated fuel additives including tert-butyl alcohol (TBA), di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), and tert-amyl methyl ether (TAME) using EPA 8020, 8015, and 8260M. The analytical results of the soil and groundwater samples are tabulated on pages 7 and 8, Tables 2, 3 and 4. The laboratory analytical reports including the Chain-of-custody documentation, are attached in Appendix F. We will also submit analytical results electronically to the State Water Resources Control Board Geotracker database as required by Title 23, Division 3, Chapter 16, Article 12 of the California Code of Regulations.

**Table 2 - Soil Sample Results - TPH-g, BTEX and MTBE**

Date	Sample ID	TPH as gasoline	B	T	E	X	MTBE
		-----mg/Kg-----					
11/08/04	MW-1DA-19'	<1.0	<0.005	<0.005	<0.005	<0.015	<0.025
	MW-2D-19'	<1.0	<0.005	<0.005	<0.005	<0.015	<0.025
11/10/04	MW-2D-40'	2.4	1.0	0.030	0.17	0.047	<0.025
11/11/04	MW-1D-49'	<1.0	<0.005	0.014	<0.005	0.016	<0.025
11/12/04	MW-3D-19'	<1.0	<0.005	0.013	<0.005	0.015	<0.025
11/15/04	MW-3D-44'	<1.0	<0.005	<0.005	<0.005	<0.015	<0.025
< = Less than the indicated laboratory test method detection limit.							



**Table 3 - Groundwater Sample Results - TPH-g and BTEX**

Date	Sample ID	TPH as gasoline	B	T	E	X
		µg/L				
11/19/04	MW-1D	57	<1.0	<1.0	<1.0	<1.0
	MW-2D	1,600	53	3.4	87	16.9
	MW-3D	<50	<1.0	<1.0	<1.0	<1.0
< = Less than the indicated laboratory test method detection limit.						

**Table 4 - Groundwater Sample Results - 5 Ether Based Oxygenates**

Date	Sample ID	MTBE	TBA	DIPE	ETBE	TAME
		µg/L				
11/19/04	MW-1D	18	<1.0	<1.0	<1.0	1.1
	MW-2D	110	43	<1.0	<1.0	6.6
	MW-3D	84	<1.0	<1.0	<1.0	5.9
< = Less than the indicated laboratory test method detection limit.						

### Closure

Based on the analytical results of the soil and groundwater samples collected during this investigation we have confirmed that the secondary aquifer at the site has been impacted by TPH as gasoline, BTEX, and oxygenated fuel additives including MTBE. We recommend that the three deep wells (MW-1D through MW-3D) continue to be sampled on a quarterly basis and concurrent with the existing shallow wells (MW-1 through MW-9) for the period of one year. The quarterly sampling will allow us to establish trends in contaminant concentrations and to determine a consistent groundwater flow direction in the secondary aquifer. Since impact from petroleum hydrocarbons in the secondary aquifer has been confirmed at the site, we recommend that the sensitive receptor survey be updated and the potential for high risk receptors be re-evaluated. In addition, we recommend that a site conceptual model be prepared to summarize all available information regarding the subject site and the petroleum hydrocarbon release. After we have completed the proposed sampling, and submitted the above referenced reports an evaluation of onsite remedial options should be performed.

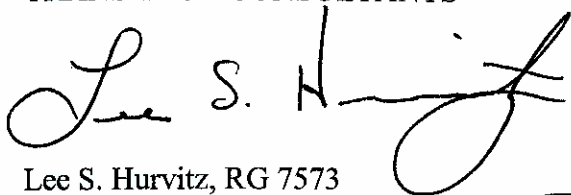




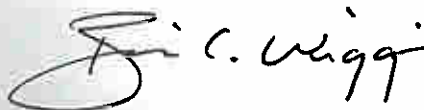
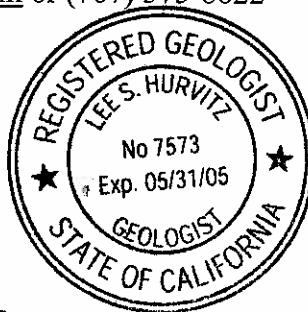
We appreciate the opportunity to be of service to you and we trust that this is the information you require at this time. If you have any questions or need additional information, please do not hesitate to contact us at [www.transtechconsultants.com](http://www.transtechconsultants.com) or (707) 575-8622

Sincerely

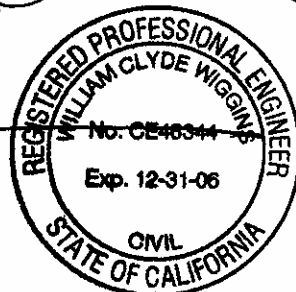
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Lee S. Hurvitz, RG 7573  
Senior Geologist



Bill C. Wiggins, PE  
Registered Civil Engineer

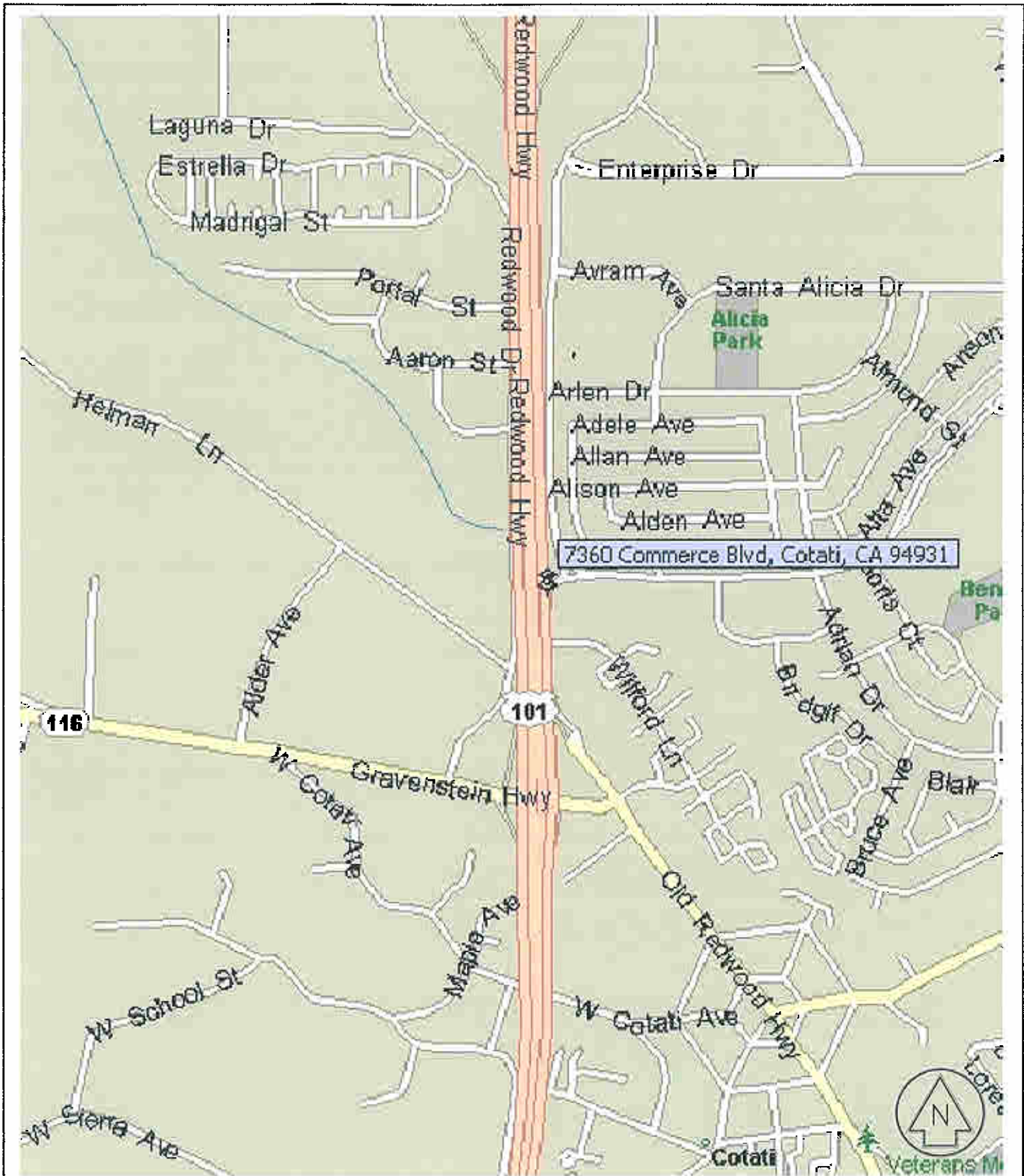


Enclosures:

Plate 1,	Site Location Map
Plate 2,	Site Plan Groundwater Elevation Contour Map
Plates A-D,	Boring Logs, MW-1DA, MW-1D, MW-2D, MW-3D
Plates E-G,	Monitoring Well Completion Diagrams- MW-1D, MW-2D, MW-3D
Appendix A,	Historical Soil Sample Analytical Results
Appendix B,	Historical Groundwater Sample Analytical Results
Appendix C,	September 2003 and February 2004 CPT Investigation Results
Appendix D,	Soil Disposal Documentation
Appendix E,	Groundwater Field Sampling Forms
Appendix F,	Analytical Sciences Laboratory Reports Dated November 22, 2004 and November 30, 2004

Distribution List





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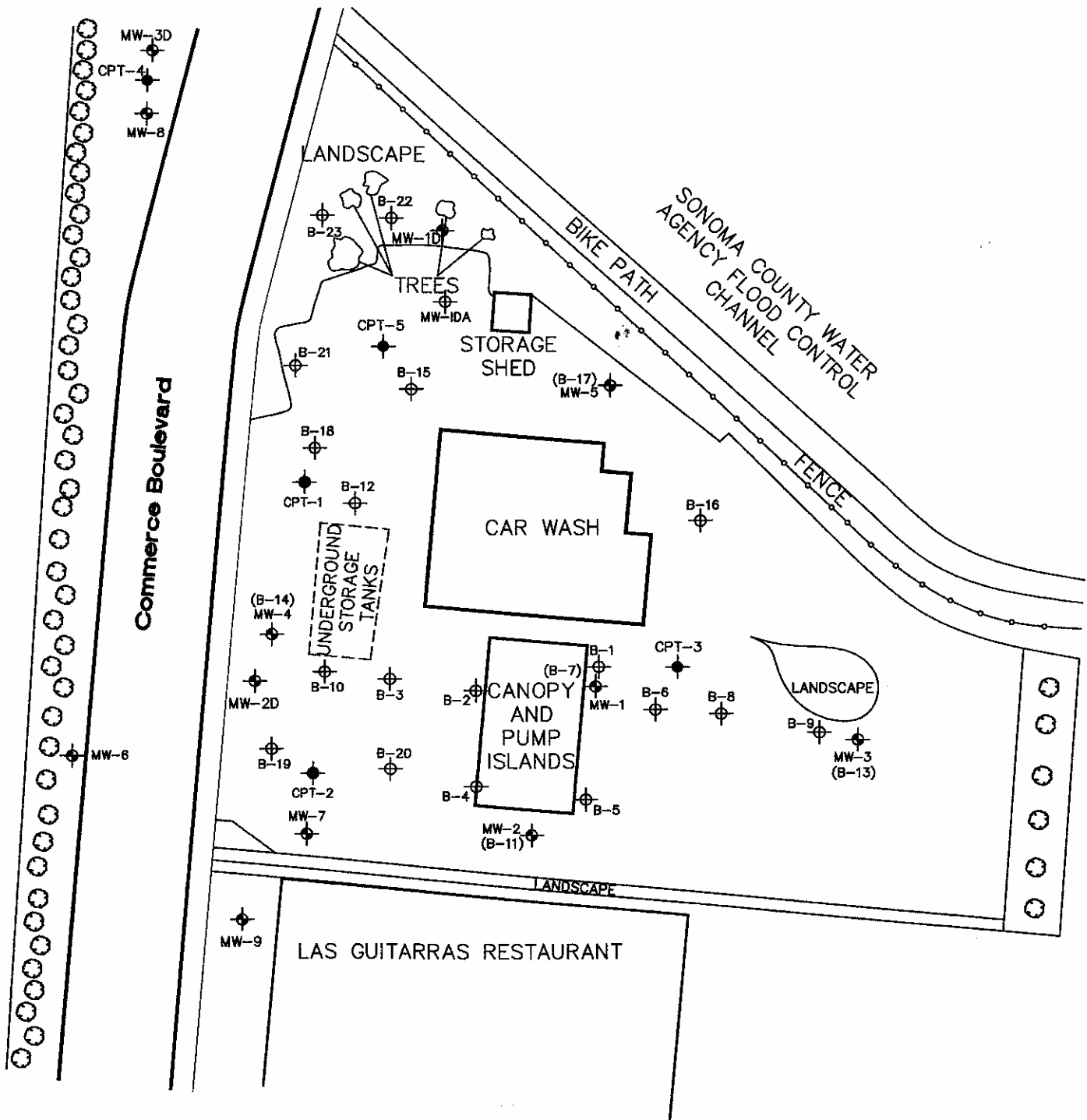
## SITE LOCATION MAP

ROYAL COACH CARWASH  
7360 COMMERCE BLVD.  
COTATI, CALIFORNIA

PLATE:

1

DRAWN BY: PSC	DWG NAME: 1222.01 SLM	APPR. BY: BCW	JOB NUMBER: 1222.01	W.O. NUMBER: A-340	REVISIONS:	DATE: 12/15/03
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- MONITORING WELL LOCATION
- ⊕ SOIL BORING LOCATION
- ◆ CPT LOCATION

0 20' 40'  
Bar Scale ±



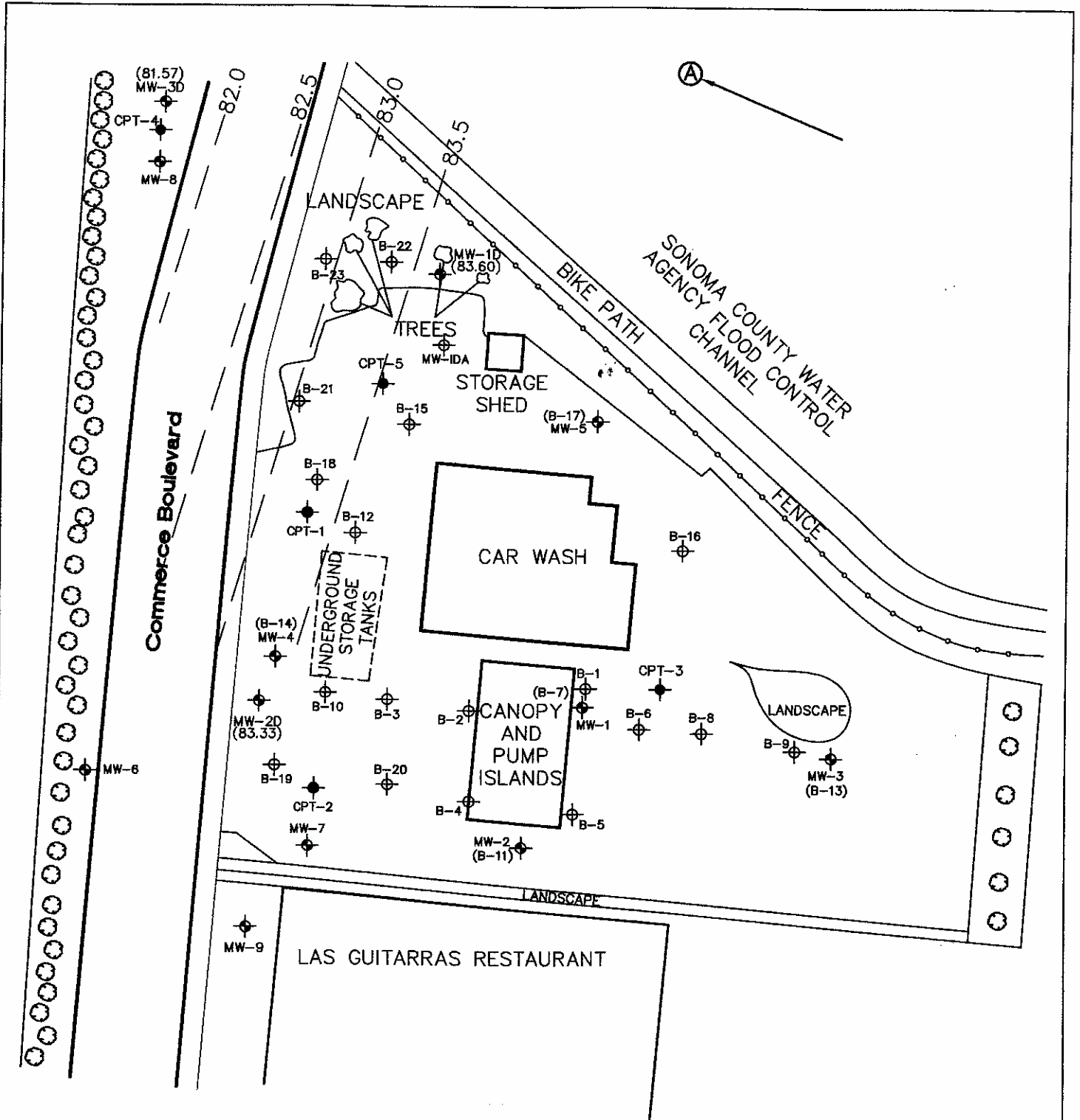
930 SHILOH RD., BLDG 44, SUITE J  
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## SITE PLAN

ROYAL COACH CAR WASH  
7360 COMMERCE BLVD.  
COTATI, CALIFORNIA

PLATE:  
2

DRAWN BY: JLP	DWG NAME: 1222.01 SP	APPR. BY: LSH	JOB NUMBER: 1222.01	W.O. NUMBER: A-524	REVISIONS:	DATE: 1/10/05
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- ⊕ MONITORING WELL LOCATION
- ⊕ SOIL BORING LOCATION
- ⊕ CPT LOCATION

0 20' 40'  
Bar Scale ±



**TRANS TECH CONSULTANTS**

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**GROUNDWATER ELEVATION CONTOUR MAP FOR 12/3/04**  
**DEEP WELLS**  
ROYAL COACH CAR WASH  
7360 COMMERCE BLVD.  
COTATI, CALIFORNIA

**PLATE:**  
**3**

DRAWN BY:	DWG NAME:	APPR. BY:	JOB NUMBER:	W.O. NUMBER:	REVISIONS:	DATE:
JLP	1222.01 GWFP	LSH	1222.01	A-524		1/10/05

Date: 11/8/04  
Logged By: LSH  
Drill Start Time: 9:15AM  
Drill End Time: 2:00PM

BORING No.  
**MW-IDA**

Boring Location - See Site Plan

See Unified Soil Classification System (USCS)  
for Legend and information not noted.

Drilling Contractor: GREGG DRILLING

Driller's Name: TREVOR

Drilling Method: SEE TEXT FOR DETAILS

Sampling Method: CAMSSS

Hammer Weight, lbs. 140

MW Installed: Y ☐ N ☒ if no, boring filled with:

Cement ☒ Bentonite: Cement ☐ Grout ☒ Chips ☐

Auger Depth, ft: 30 Total Depth, ft: 30

Hydropunch Int., ft: NA Temp Screen, ft: NA

Notes: APPROX. 10' NORTH 10' EAST OF CPT-5, HAND AUGER 5'- UTILITY ENCOUNTERED WITH WATER, TREMIE GROUT HOLE AND FIX PIPE  
WEL NOT COMPLETED

Sample	Sample Condition	Inches Recovered	C = CMSSS Sp = Std. Pin	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm) maximum, not stabilized	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	Estimated Gravel, %	Estimated Sand, %	Estimated Silt, %	Estimated Clay, %	Description:
								No	No	A	0						ASPHALT AND BASEROCK
											1						GRAVELLY SILT
										ML	2						
											3						
											4						DARK BROWN CLAY
										CL	5						
											6						
											7						
											8						GREYISH CLAY, SANDY SILT
											9		35	45	20		GREYISH SANDY CLAYEY SILT, DRY TO MOIST
											10		35	45	20		STIFF
											11						
											12						
										ML	13						
											14						
											15						
											16						



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## BORING LOG MW-IDA

ROYAL COACH CAR WASH  
7360 COMMERCE BLVD.  
COTATI, CA 94931

PLATE:

A-1

DRAWN BY: JLP	DWG NAME: 1222.01 BL	APPR. BY: LSH	JOB NUMBER: 1222.01	W.O. NUMBER: A-617	REVISIONS:	DATE: 1/10/05
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BORING No.  
**MW-IDA**

Sample	Sample Condition	Inches Recovered	C = CMSS SP = Std. Pin	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm) maximum, not stabilized	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	Estimated Gravel, %	Estimated Sand, %	Estimated Silt, %	Estimated Clay, %	Description:
								No	No		17						Soil Type (USCS); Color; Moisture Condition (dry, moist, wet); Relative Density - sand & gravel (v. loose, loose, m. dense, dense, v. dense); Consistency - silt & clay (v. soft, soft, m. stiff, stiff, v. stiff, hard)
										ML/CL	18						
X		6	C	11			5.6				19		20	40	40		DARK GREY SILTY CLAY/ CLAYEY SILT W/ SAND
X		6		22	✓						20		30	40	30		
X		6		30							20		50	35	15		DARK GREY SILTY SAND W/ CLAY MOIST DENSE
										SM	21						
											22						
											23						
											24						
											25		5	40	55		DARK GREY CLAY WITH SILT
		6	C	19							26		5	40	55		MOIST, HARD
		6		22			1.5				26		5	40	55		
		6		12							27		5	40	55		
		6	C	20						CL	27		5	40	55		
		6		22							28		5	40	55		
		6		9							28			35	65		
		6	C	17							29			35	65		
		6		22							29			35	65		
											30						
											31						
											32						
											33						
											34						
											35						



**TRANS TECH CONSULTANTS**

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**BORING LOG MW-IDA**

ROYAL COACH CAR WASH

7360 COMMERCE BLVD.

COTATI, CA 94931

**PLATE:**

**A-2**

DRAWN BY:

JLP

DWG NAME:

1222.01 BL

APPR. BY:

LSH

JOB NUMBER:

1222.01

W.O. NUMBER:

A-617

REVISIONS:

DATE:

1/10/05

Date: 11/10/04 / 11/11/04

Logged By: LSH

Drill Start Time: 8:45PM / 1:00PM

Drill End Time: 4:00PM / 4:30PM

BORING No.  
**MW-ID**

Boring Location - See Site Plan

See Unified Soil Classification System (USCS)  
for Legend and information not noted.

Drilling Contractor: GREGG DRILLING

Driller's Name: TREVOR

Drilling Method: SEE TEXT FOR DETAILS

Sampling Method: CAMSSS

Hammer Weight, lbs. 140

MW Installed: Y ☒ N ☐ if no, boring filled with:Cement ☐ Bentonite: Cement ☐ Grout ☐ Chips ☐

Auger Depth, ft: 58 Total Depth, ft: 58.5

Hydropunch Int., ft: NA Temp Screen, ft: NA

Notes: HAND AUGER 5', DRILL TO 25' SAMPLE CONTINUOUS TO 30' TO CONFIRM SOIL TYPE FOR SETTING CONDUCTOR CASING  
SHALLOW SOIL SAMPLES WERE COLLECTED FROM MW-IDA AND DEEMED TO BE GENERALLY REPRESENTATIVE OF CONDITIONS IN MW-ID

Sample	Sample Condition	Inches Recovered	C = CMSSS SP = Std. Pin	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm) maximum, not stabilized	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	Estimated Gravel, %	Estimated Sand, %	Estimated Silt, %	Estimated Clay, %	Description:
								No	No	B	1						GRASS
										ML	2						FILL MATERIAL/ SANDY SILT
											3						
											4						LIGHT BROWN SILT AND CLAY WITH SAND
											5						
											6						
											7						
											8						
											9						
										ML	10						
										CL	11						
											12						
											13						
											14						
											15						
											16						



TRANS TECH CONSULTANTS

930 SHILOH RD., BLDG 44, SUITE J

WINDSOR, CA 95492

PHONE: 707-575-8622 FAX: 707-837-7334

## BORING LOG MW-ID

ROYAL COACH CAR WASH

7360 COMMERCE BLVD.

COTATI, CA 94931

PLATE:

B-1

DRAWN BY:

JLP

DWG NAME:

1222.01 BL

APPR. BY:

LSH

JOB NUMBER:

1222.01

W.O. NUMBER:

A-617

REVISIONS:

DATE:

1/10/05

BORING No.  
**MW-ID**

Sample	Sample Condition	Inches Recovered	C = CMSSS SP = Std. Pin	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm) maximum, not stabilized	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	Estimated Gravel, %	Estimated Sand, %	Estimated Silt, %	Estimated Clay, %	Description:	
								No	No		17						LIGHT BROWN SILT AND CLAY WITH SAND	
											18							
											19							
											20							
										ML/CL	21							
											22							
											23							
											24							
											25							
											26							
X		6		10			0.3				25			40	60		GREY CLAY WITH SILT, DRY, HARD	
X		6	C	16							26			40	60			
X		6		20							27			40	60			
X		6		7							28			30	70			
X		6	C	12							29			30	70			
X		6		15							30			30	70			
X		6	C	9							31			30	70			
X		6	C	12			0.1				32			30	70			
X		6		17							33			30	70			
										CL	34							
											35							
											36							
X		6		12							35		15	30	55			
X		6	C	13							36		15	30	55		GREYISH SILTY CLAY W/ SAND, MOIST, HARD	
X		6		15									15	30	55			



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**BORING LOG MW-ID**

ROYAL COACH CAR WASH  
7360 COMMERCE BLVD.  
COTATI, CA 94931

PLATE:  
**B-2**

DRAWN BY: JLP	DWG NAME: 1222.01 BL	APPR. BY: LSH	JOB NUMBER: 1222.01	W.O. NUMBER: A-617	REVISIONS:	DATE: 1/10/05
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BORING No.  
**MW-ID**

Sample	Sample Condition	Inches Recovered	C = CMSSS SP = Std. Pin	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm) maximum, not stabilized	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	Estimated Gravel, %	Estimated Sand, %	Estimated Silt, %	Estimated Clay, %	Description:
								No	No	CL	37						Soil Type (USCS); Color; Moisture Condition (dry, moist, wet); Relative Density - sand & gravel (v. loose, loose, m. dense, dense, v. dense); Consistency - silt & clay (v. soft, soft, m. stiff, stiff, v. stiff, hard)
										CL	38						
X		6		13						SM	39		15	35	50		GREYISH SILTY CLAY MOIST TO WET
X		6	C	15	▽					SM	39		55	20	15		GREYISH SILTY SAND WITH CLAY WET
X		6		20						SM	39		15	35	50		GREYISH SILTY CLAY DRY TO MOIST
										CL	40						
										CL	41						
										CL	42						
										CL	43						
										ML	44						
										ML	45						
										ML	46						
										ML	47						
										ML	48						
X		6		6						SP	49		80	20			GREY SAND WITH SILT, DENSE, SATURATED
X		6	C	13				YES		SP	49		80	20			
X		6		25						SP	50		80	20			
										SP	51						
										SP	52						
										SP	53						
										SP	54		90	10			
X		6	C	5						SP	54		90	10			GREYISH SAND, MED DENSE, SATURATED
X		6		7						SP	55		90	10			
X		6		10						SP	55		90	10			
X		6		7						SP	56		70	30			
X		6		9						SM	56		70	30			



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**BORING LOG MW-ID**

ROYAL COACH CAR WASH  
7360 COMMERCE BLVD.  
COTATI, CA 94931

PLATE:  
**B-3**

DRAWN BY: JLP	DWG NAME: 1222.01 BL	APPR. BY: LSH	JOB NUMBER: 1222.01	W.O. NUMBER: A-617	REVISIONS:	DATE: 1/10/05
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BORING No.  
**MW-ID**

Sample	Sample Condition	Inches Recovered	C = CMSSS SP = Std. Pin	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm) maximum, not stabilized	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	Estimated Gravel, %	Estimated Sand, %	Estimated Silt, %	Estimated Clay, %	Description:
XX		6	C	14						GM	57		30	20	30	10	GRAVELLY SANDY SILT W/ CLAY DENSE, WET
XX		6		12						ML	57		30	20	30	10	
XX		6	C	26						CL	58		15	25	35	25	
XX		6		31							58		10	40	50		LIGHT BROWN SILTY CLAY
											59						HARD, DRY TO MOIST
											60						
											61						
											62						
											63						
											64						
											65						
											66						
											67						
											68						
											69						
											70						
											71						
											72						
											73						



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**BORING LOG MW-ID**

ROYAL COACH CAR WASH  
7360 COMMERCE BLVD.  
COTATI, CA 94931

PLATE:  
**B-4**

DRAWN BY: JLP	DWG NAME: 1222.01 BL	APPR. BY: LSH	JOB NUMBER: 1222.01	W.O. NUMBER: A-617	REVISIONS:	DATE: 1/10/05
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Date: 11/8/04 / 11/9/04 / 11/11/04

BORING No.

Logged By: LSH

**MW-2D**

Boring Location - See Site Plan

Drill Start Time: 3:00PM / 7:45PM / 8:30PM

Drill End Time: 4:00PM / 2:00PM / 12:00PM

See Unified Soil Classification System (USCS)  
for Legend and information not noted.

Drilling Contractor: GREGG DRILLING

Driller's Name: TREVOR

Drilling Method: SEE TEXT FOR DETAILS

Sampling Method: CAMSSS

Hammer Weight, lbs. 140

MW Installed: Y ☒ N ☐ if no, boring filled with:Cement ☐ Bentonite: Cement ☐ Grout ☐ Chips ☐

Auger Depth, ft: 55 Total Depth, ft: 56.5

Hydropunch Int., ft: NA Temp Screen, ft: NA

Notes: HAND AUGER 5' CONDUCTOR CASING SET TO 31' BG.

Sample	Sample Condition	Inches Recovered	C = CMSSS SP = Std. Pin	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm) maximum, not stabilized	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	Estimated Gravel, %	Estimated Sand, %	Estimated Silt, %	Estimated Clay, %	Description:
								No	No	A							ASPHALT
										B	1						BASEROCK
										ML	2						BROWNISH SILT
										SM	3						BROWNISH SILTY SAND
										ML	4						BROWNISH SILT
								NO	YES		5						GREYISH CLAY WITH SILT AND SAND
										CL	6						
										ML	7						
											8						
								YES			9						
<input checked="" type="checkbox"/>		0	2								10		55	35	10		GREYISH SILTY SAND LOOSE, WET
		3	4								11		55	35	10		
		6	7				11.9				12						
								NO			13						
										SM	14						
											15						
											16						

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**BORING LOG MW-2D**ROYAL COACH CAR WASH  
7360 COMMERCE BLVD.  
COTATI, CA 94931

PLATE:

C-1

DRAWN BY:

DWG NAME:

APPR. BY:

JOB NUMBER:

W.O. NUMBER:

REVISIONS:

DATE:

JLP

1222.01 BL

LSH

1222.01

A-617

12/9/04

BORING No.  
MW-2D

Sample	Sample Condition	Inches Recovered	C = CMSS SP = Std. Pin	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm) maximum, not stabilized	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	Estimated Gravel, %	Estimated Sand, %	Estimated Silt, %	Estimated Clay, %	Description:
											17						Soil Type (USCS); Color; Moisture Condition (dry, moist, wet); Relative Density - sand & gravel (v. loose, loose, m. dense, dense, v. dense); Consistency - silt & clay (v. soft, soft, m. stiff, stiff, v. stiff, hard)
										SM	18						
X		6	C	12				YES	YES		19			50	50		DARK GREY SILTY CLAY, DRY TO MOIST
X		6		24			11.9				20			50	50		HARD
X		6		32						CL	21						
										ML	22						
											23						
											24						
											25						
X		6	C	12			8.9	SLIGHT	NO		26			40	60		DARK GREY SILTY CLAY
X		6		17							27			40	60		
X		6		24							28			40	60		
X		6	C	11						CL	29			40	60		
X		6		17							30			40	60		
X		6		22							31			40	60		
X		6	C	12			5.5				32			30	70		
X		6		21							33			30	70		
X		0	C	26							34			30	70		
											35						
										CL	36						
										ML							
X		6	C	10							35			40	60		GREY SILTY CLAY MOIST
X		6		12							36			40	60		
X		6		19										40	60		



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WINDSOR, CA 95492  
PHONE: 707-575-8622 FAX: 707-837-7334

## BORING LOG MW-2D

ROYAL COACH CAR WASH  
7360 COMMERCE BLVD.  
COTATI, CA 94931

PLATE:  
C-2

DRAWN BY: JLP	DWG NAME: 1222.01 BL	APPR. BY: LSH	JOB NUMBER: 1222.01	W.O. NUMBER: A-617	REVISIONS:	DATE: 12/9/04
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Sample	Sample Condition	Inches Recovered	C = CMSSS SP = Std. Pin	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm) maximum, not stabilized	Odor	Discolored	USCS Soil Class.	Depth In Feet	Graphic Log	Estimated Gravel, %	Estimated Sand, %	Estimated Silt, %	Estimated Clay, %	Description:
								NO	NO		37						Soil Type (USCS); Color; Moisture Condition (dry, moist, wet); Relative Density - sand & gravel (v. loose, loose, m. dense, dense, v. dense); Consistency - silt & clay (v. soft, soft, m. stiff, stiff, v. stiff, hard)
											38						
								YES	YES		39						
X		6		12							40		15	40	45		GREYISH CLAY WITH SILT AND SAND
		6	C	24						CL	41		15	40	45		MOIST TO WET HARD
		6		27						ML	42						
											43						
X		4		8				YES	YES		44		10	50	40		CLAYEY SILT BECOMING SANDY WET
		6	C	10							45		10	50	40		
		6		10							46		10	50	40		
		6	C	8						SM	47		40	40	20		BROWNISH GREY SILTY SAND/
		6		10						ML	48		40	40	20		SANDY SILT, WET
		6	C	12							49		40	40	20		
		6		8				NO	NO		50		10	80	10		LIGHT GREY SAND WITH SOME GRAVELS
		6		24						SP	51		10	80	10		AND SILT, WET
		6		27							52						
X		6	C	11						SM	53		10	40	40	10	SANDY SILT/SILTY SAND, WET TO SATURATED
		6		30							54		60	35	5		
		6		24							55		60	35	5		SANDY GRAVEL, WET TO SATURATED
										GP	56						
											57						
											58						
								NO	NO		59						
X		6		7							60		40	60			GREYISH CLAY WITH SILT VERY STIFF
		6	C	9						CL	61		40	60			MOIST
		6		4							62		40	60			



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## BORING LOG MW-2D

ROYAL COACH CAR WASH

7360 COMMERCE BLVD.

COTATI, CA 94931

PLATE:

**C-3**

DRAWN BY:

JLP

DWG NAME:

1222.01 BL

APPR. BY:

LSH

JOB NUMBER:

1222.01

W.O. NUMBER:

A-617

REVISIONS:

DATE:

1/10/05

Date: 11/12/04 / 11/15/04

Logged By: LSH

Drill Start Time: 8:15AM / 8:45AM

Drill End Time: 3:15PM / 3:00PM

BORING No.

**MW-3D**

Boring Location - See Site Plan

See Unified Soil Classification System (USCS)  
for Legend and Information not noted.

Drilling Contractor: GREGG DRILLING

Driller's Name: TREVOR

Drilling Method: SEE TEXT FOR DETAILS

Sampling Method: CAMSSS

Hammer Weight, lbs. 140

MW Installed: Y ☒ N ☐ if no, boring filled with:Cement ☐ Bentonite: Cement ☒ Grout ☐ Chips ☐

Auger Depth, ft: 56 Total Depth, ft: 56.5

Hydropunch Int., ft: NA Temp Screen, ft: NA

Notes: HAND AUGER 5'

Sample	Sample Condition	Inches Recovered	C = CMSSS SP = Std. Pin	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm) maximum, not stabilized	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	Estimated Gravel, %	Estimated Sand, %	Estimated Silt, %	Estimated Clay, %	Description:
								No	No		1						Soil Type (USCS); Color; Moisture Condition (dry, moist, wet); Relative Density - sand & gravel (v. loose, loose, m. dense, dense, v. dense); Consistency - silt & clay (v. soft, soft, m. stiff, stiff, v. stiff, hard)
											2						
											3						BROWN SILTY CLAY
											4						
											5						
										CL ML	6						
											7						
											8						
											9						
											10						
		3		6							11		50	50			
		6	C	14			0.1				12		50	50			LIGHT BROWN SANDY SILT/ SILTY
		6		19							13		50	50			SAND. DRY TO MOIST, HARD/ DENSE
											14						
											15						
											16						

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**BORING LOG MW-3D**ROYAL COACH CAR WASH  
7360 COMMERCE BLVD.  
COTATI, CA 94931

PLATE:

D-1

DRAWN BY:

JLP

DWG NAME:

1222.01 BL

APPR. BY:

LSH

JOB NUMBER:

1222.01

W.O. NUMBER:

A-617

REVISIONS:

DATE:

1/10/05

BORING No.  
**MW-3D**

Sample	Sample Condition	Inches Recovered	C = CMSSS SP = Std. Pin	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm) maximum, not stabilized	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	Estimated Gravel, %	Estimated Sand, %	Estimated Silt, %	Estimated Clay, %	Description:
								No	No	SM	17						Soil Type (USCS); Color; Moisture Condition (dry, moist, wet); Relative Density - sand & gravel (v. loose, loose, m. dense, dense, v. dense); Consistency - silt & clay (v. soft, soft, m. stiff, stiff, v. stiff, hard)
										ML	18						
X		0	C	22	▽		0.3				19		20	70	10		BROWN SAND WITH SILT AND GRAVEL SATURATED, DENSE
X		4		26							20		20	70	10		
X		6		14						SP	21						
											22						
											23						
											24						
											25						
X		0	C	10							26			30	70		DARK GREY CLAY WITH SILT
X		3		18							27			30	70		DRY HARD
X		6		22							28			30	70		
X		0	C	10			0.1				29			30	70		
X		6		20							30			30	70		
X		4		23							31			30	70		
X		6	C	17						CL	32			30	70		
X		6		50							33			30	70		
											34						
											35						
X		6	C	8				↓	↓		36			40	60		DARK GREY CLAY WITH SILT, DRY TO MOIST
X		6		21										40	60		HARD



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**BORING LOG MW-3D**

ROYAL COACH CAR WASH

7360 COMMERCE BLVD.

COTATI, CA 94931

PLATE:

**D-2**

DRAWN BY:

JLP

DWG NAME:

1222.01 BL

APPR. BY:

LSH

JOB NUMBER:

1222.01

W.O. NUMBER:

A-617

REVISIONS:

DATE:

1/10/05



BORING No.  
**MW-3D**

Sample	Sample Condition	Inches Recovered	C = CMSSS Sp = Std. Pin	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm) maximum, not stabilized	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	Estimated Gravel, %	Estimated Sand, %	Estimated Silt, %	Estimated Clay, %	Description:
✓		6	C	25				No	No		37				40	60	DARK GREY CLAY WITH SILT, DRY TO MOIST HARD
										CL	38						
											39						
											40						
											41						
											42						
											43						
✓		4	C	6						ML	44		20	20	40	20	LIGHT GREY SANDY GRAVELLY SILT
✓		6		14						SM	45		20	20	40	20	WITH CLAY, WET.
✓		6		23						GM	46			20	60	20	CLAYEY SILT WITH SAND MOIST TO WET
											47						
										ML	48						
										SM	49						
✓		6	C	14						SP	50		20	55	20	5	FINE SAND WITH SILT, SATURATED
✓		6		17							51		20	55	20	5	GRAVELLY SILTY SAND, SATURATED
✓		6		20							52						
										SP	53						
										SM	54		20	45	35		FINE SILTY SAND WITH GRAVELY
✓		6	C	25						SM	55		10	45	45		WET TO SATURATED
✓		6		27						ML	56			50	50		FINE GRAINED SAND WITH SILT, MOIST
✓		6	C	10										40	60		
✓		6		20										40	60		BROWN SANDY SILT, MOIST, HARD



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## BORING LOG MW-3D

ROYAL COACH CAR WASH  
7360 COMMERCE BLVD.  
COTATI, CA 94931

PLATE:  
**D-3**

DRAWN BY: JLP	DWG NAME: 1222.01 BL	APPR. BY: LSH	JOB NUMBER: 1222.01	W.O. NUMBER: A-617	REVISIONS:	DATE: 1/10/05
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BORING No.  
MW-3D

Sample	Sample Condition	Inches Recovered	C = CMSS Sp = Std. Pin	Blows / 6 in.	Initial Free Water	Static Water	PID (ppm) maximum, not stabilized	Odor	Discolored	USCS Soil Class.	Depth in Feet	Graphic Log	Estimated Gravel, %	Estimated Sand, %	Estimated Silt, %	Estimated Clay, %	Description:
X			C	28				No	No	ML				40	60		BROWN SANDY SILT, MOIST HARD
											57						
											58						
											59						
											60						
											61						
											62						
											63						
											64						
											65						
											66						
											67						
											68						
											69						
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											71						
											72						
											73						
											74						
											75						



TRANS TECH CONSULTANTS

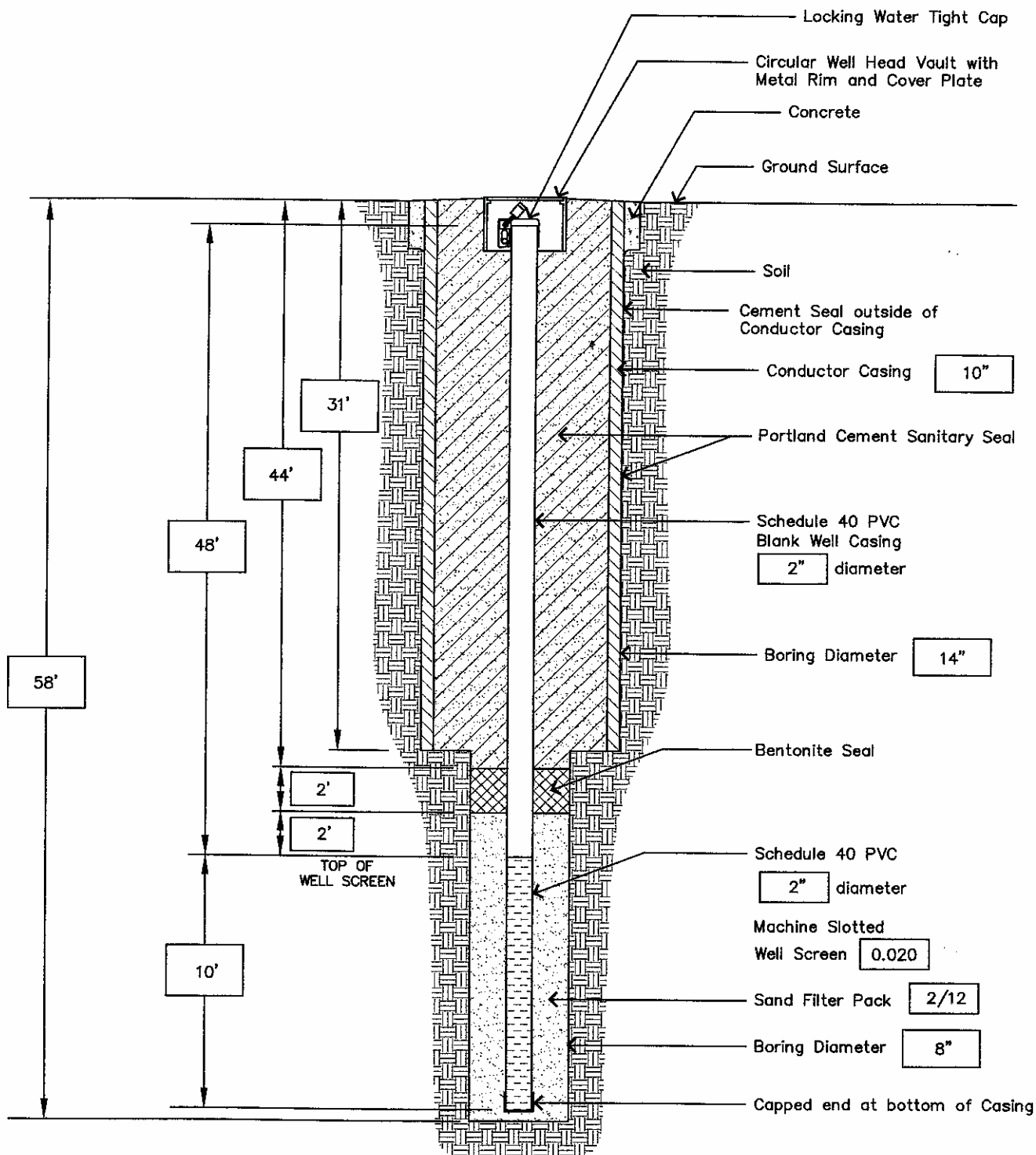
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WINDSOR, CA 95492  
PHONE: 707-575-8622 FAX: 707-837-7334

## BORING LOG MW-3D

ROYAL COACH CAR WASH  
7360 COMMERCE BLVD.  
COTATI, CA 94931

PLATE:  
D-4

DRAWN BY: JLP	DWG NAME: 1222.01 BL	APPR. BY: LSH	JOB NUMBER: 1222.01	W.O. NUMBER: A-617	REVISIONS:	DATE: 12/9/04
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NOT TO SCALE

See text for information not noted



**TRANS TECH CONSULTANTS**

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WINDSOR, CA 95492  
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## WELL COMPLETION DIAGRAM

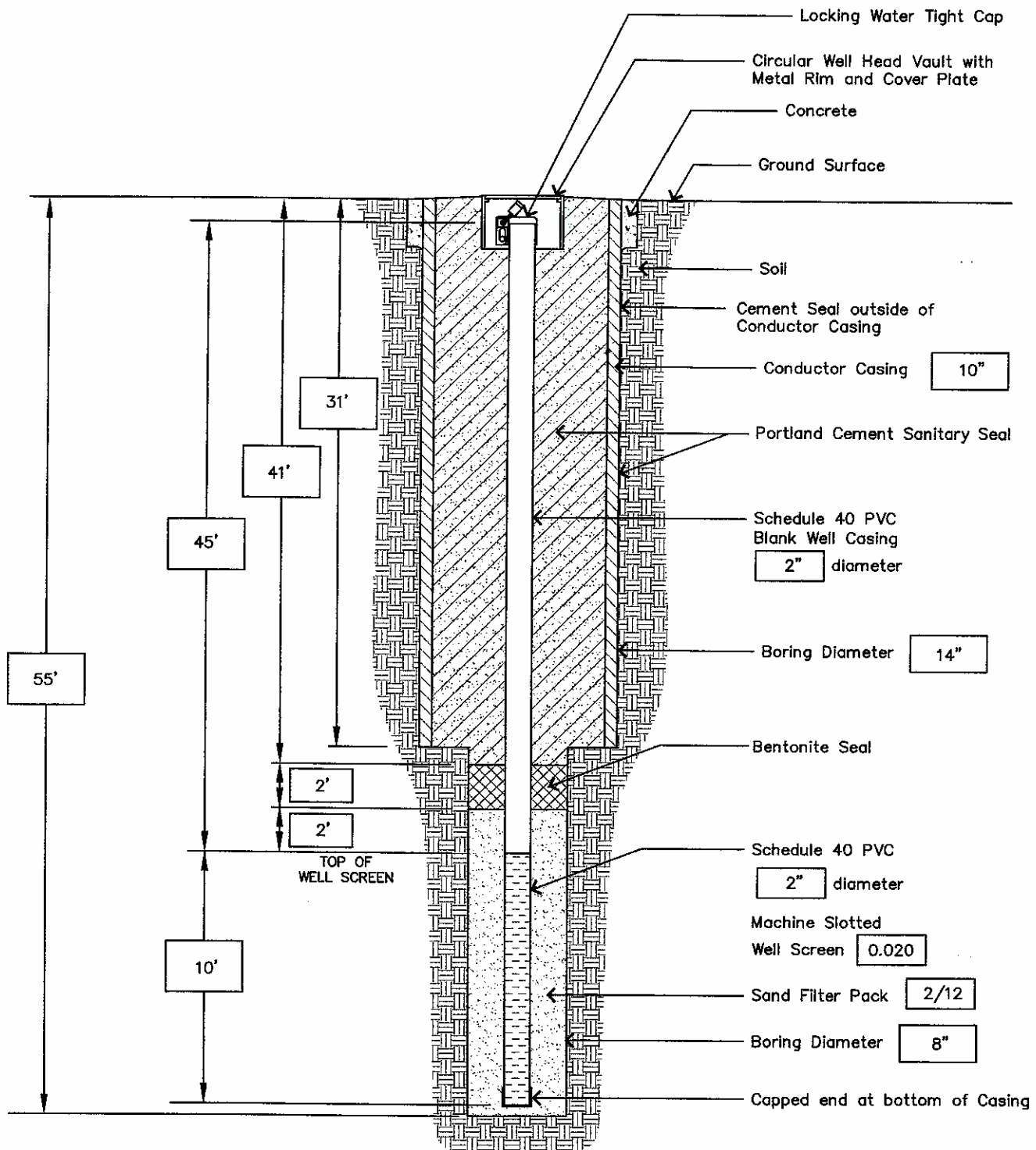
MW-1D

ROYAL COACH CARWASH  
7360 COMMERCE BLVD.  
COTATI, CALIFORNIA

PLATE:

E

DRAWN BY: PSC	DWG NAME: 1222.01 WCD W/ CC	APPR. BY: LSH	JOB NUMBER: 1222.01	W.O. NUMBER: A-616	REVISIONS:	DATE: 11/16/04
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NOT TO SCALE

See text for information not noted



**TRANS TECH CONSULTANTS**

930 SHILOH RD., BLDG 44, SUITE J  
WINDSOR, CA 95492  
PHONE: 707-575-8622 FAX: 707-837-7334

## WELL COMPLETION DIAGRAM

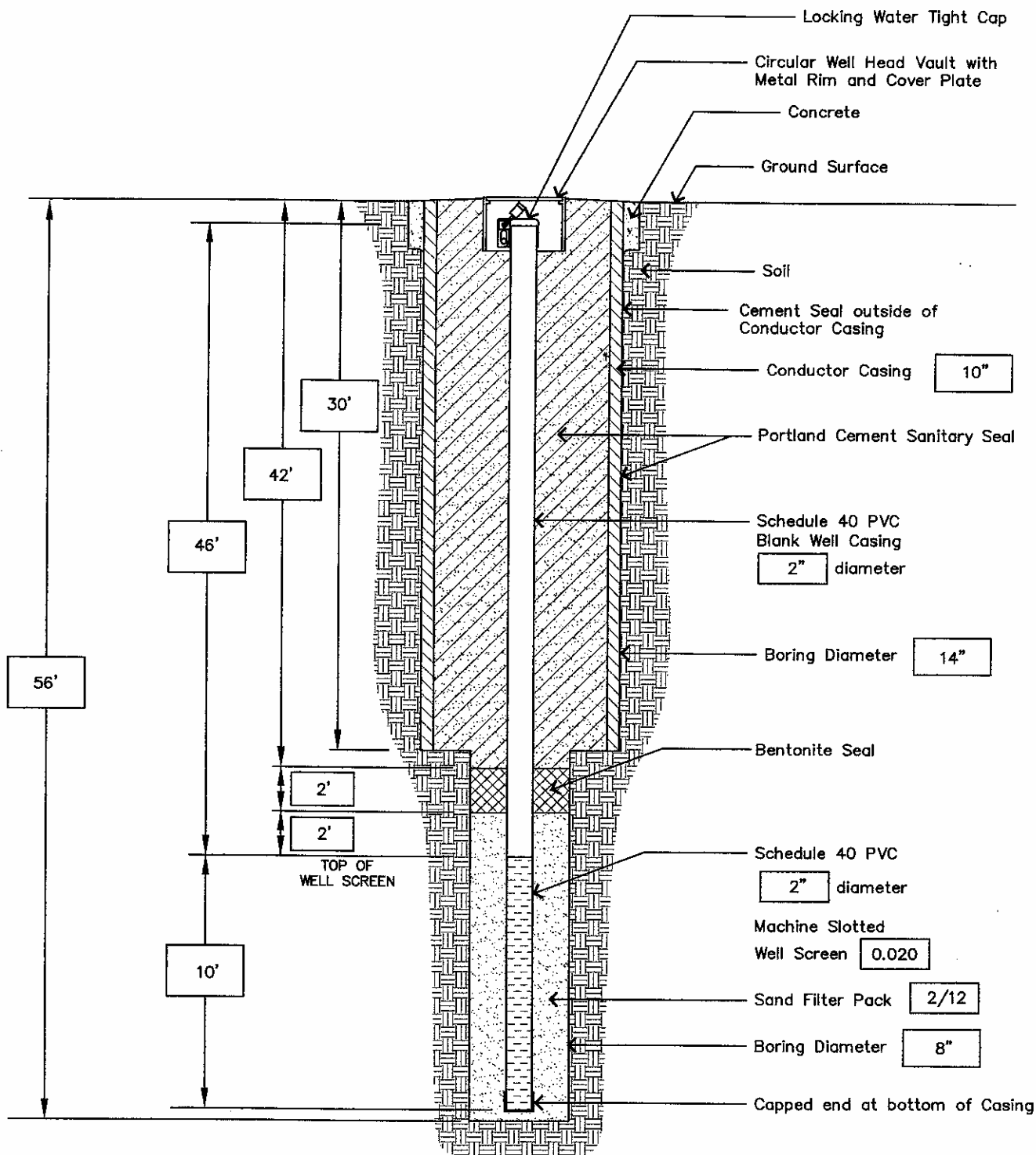
MW-2D

ROYAL COACH CARWASH  
7360 COMMERCE BLVD.  
COTATI, CALIFORNIA

PLATE:

F

DRAWN BY: PSC	DWG NAME: 1222.01 WCD W/ CC	APPR. BY: LSH	JOB NUMBER: 1222.01	W.O. NUMBER: A-616	REVISIONS:	DATE: 11/16/04
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NOT TO SCALE

See text for information not noted



**TRANS TECH CONSULTANTS**

930 SHILOH RD., BLDG 44, SUITE J  
WINDSOR, CA 95492  
PHONE: 707-575-8622 FAX: 707-837-7334

## WELL COMPLETION DIAGRAM

MW-3D

ROYAL COACH CARWASH  
7360 COMMERCE BLVD.  
COTATI, CALIFORNIA

PLATE:

G

DRAWN BY:	DWG NAME:	APPR. BY:	JOB NUMBER:	W.O. NUMBER:	REVISIONS:	DATE:
PSC	1222.01 WCD W/ CC	LSH	1222.01	A-616		11/16/04



## APPENDIX A

## Appendix A - Historical Soil Sample Analytical Results

### Soil Sample Analytical Results from May 3, 1993 Investigation

Sample Date	Boring ID	Depth (ft.)	TPH as gasoline	B	T	E	X
			-----mg/Kg-----	-----µg/Kg-----			
05/03/93	B-1	4.0	<1.0	<2.5	<2.5	<2.5	<2.5
	B-1	11.0	1.2	38	<2.5	<2.5	<2.5
	B-2	6.0	<1.0	<2.5	<2.5	<2.5	<2.5
	B-2	13.0	<1.0	16	<2.5	<2.5	<2.5
	B-3	6.0	<1.0	71	<2.5	<2.5	<2.5
	B-3	9.0	1.7	280	<2.5	36	170
	B-3	12.5	25	830	1,200	390	1,600
	B-4	6.0	<1.0	<2.5	<2.5	<2.5	<2.5
	B-4	11.0	<1.0	<2.5	<2.5	<2.5	<2.5
	B-5	6.0	<1.0	<2.5	<2.5	<2.5	<2.5
	B-5	9.0	<1.0	<2.5	<2.5	<2.5	<2.5
	B-5	14.0	<1.0	<2.5	<2.5	<2.5	<2.5
< = Less than the indicated laboratory detection limit.							

### Soil Sample Analytical Results from February 1994 Investigation

Sample Date	Boring ID	Depth (ft.)	TPH as gasoline	B	T	E	X
			-----mg/Kg-----	-----µg/Kg-----			
02/22/94	B-6	14.5	51	480	180	130	140
	B-7 (MW-1)	3.0	<1.0	<2.5	<2.5	<2.5	<2.5
	B-7 (MW-1)	11.0	<1.0	<2.5	<2.5	<2.5	<2.5
	B-7 (MW-1)	16.0	2.9	120	<2.5	12	8.7
	B-8	17.5	1.7	7.9	<2.5	50	7.9
	B-9	16.0	<1.0	<2.5	<2.5	<2.5	<2.5
02/23/94	B-10	13.5	37	720	230	120	270
	B-11 (MW-2)	8.5	<1.0	<2.5	<2.5	<2.5	<2.5
	B-11 (MW-2)	13.5	<1.0	<2.5	<2.5	<2.5	<2.5
	B-12	15.5	40	720	300	81	280
	B-13 (MW-3)	15.5	<1.0	<2.5	<2.5	<2.5	<2.5



### Appendix A - Continued

#### Soil Sample Analytical Results from February 1994 Investigation

Sample Date	Boring ID	Depth (ft.)	TPH as gasoline	B	T	E	X
			-----mg/Kg-----	-----µg/Kg-----			
02/24/94	B-14 (MW-4)	6.0	<1.0	<2.5	<2.5	<2.5	<2.5
	B-14 (MW-4)	11.0	<1.0	87	29	16	42
	B-15	16.0	<1.0	<2.5	<2.5	<2.5	<2.5
	B-16	15.5	<1.0	<2.5	<2.5	<2.5	<2.5
	B-17 (MW-5)	15.0	<1.0	<2.5	<2.5	<2.5	<2.5
< = Less than the indicated laboratory detection limit.							

#### Soil Sample Analytical Results from April/November 2000 Investigation

Sample Date	Sample ID	TPH as gasoline	B	T	E	X	MTBE
		-----mg/Kg-----					
04/12/00	B-18 - 10'	270	1.1	1.2	4.1	18	NA
	B-19 - 9.5'	<1.0	<0.005	<0.005	<0.005	<0.015	7.4
	B-20 - 10'	<1.0	0.007	<0.005	<0.005	<0.015	12
11/22/00	MW-6 - 6'	<1.0	<0.005	<0.005	<0.005	<0.015	<5.0
	MW-6 - 11.5'	<1.0	<0.005	<0.005	<0.005	<0.015	<5.0
NA = Not analyzed.							

#### Soil Sample Analytical Results from August/October 2002 Investigation

Sample Date	Sample ID	TPH as gasoline	B	T	E	X	MTBE
		-----mg/Kg-----					
08/20/02	MW-7-10'	5.0	0.20	0.046	0.21	0.30	<0.050
	MW-7-20'	7.1	1.2	0.058	0.54	0.12	<0.050
< = Less than the indicated laboratory detection limit.							



### Appendix A - Continued

#### Soil Sample Analytical Results from October 2003 Investigation

Date	Sample ID	TPH as gasoline	B	T	E	X	MTBE
		-----mg/Kg-----					
10/03/03	B-21-15.5'	<1.0	<0.005	<0.005	<0.005	<0.015	<0.025
	B-21-19'	2.7	0.05	0.013	0.14	<0.015	0.15
	MW-8-11'	<1.0	0.006	<0.005	<0.005	<0.015	<0.025
	MW-8-20.5'	<500	<0.005	<0.005	<0.005	<0.015	<0.025
< = Less than the indicated laboratory test method detection limit.							

#### Soil Sample Analytical Results from March 2004 Investigation

Date	Sample ID	TPH as gasoline	B	T	E	X	MTBE
		-----mg/Kg-----					
03/16/04	B-22-9.5'	<1.0	<0.005	<0.005	<0.005	<0.015	<0.025
	B-22-14.5'	<1.0	0.005	<0.005	<0.005	<0.015	<0.025
	B-23-9.5'	<1.0	<0.005	<0.005	<0.005	<0.015	<0.025
	B-23-11'	<1.0	<0.005	<0.005	<0.005	<0.015	<0.025
	MW-9-11'	<1.0	<0.005	<0.005	<0.005	<0.015	<0.025
< = Less than the indicated laboratory test method detection limit.							



## APPENDIX B



## Appendix B - Groundwater Sample Analytical Results

### Groundwater Sample Analytical Results from May 3, 1993 Investigation

Sample Date	Sample ID	TPH as gasoline	B	T	E	X
		-----mg/L-----	-----µg/L-----			
05/03/93	B-1	20	1,300	<5.0	390	170
	B-2	2.8	150	<5.0	41	3.1

< = Less than the indicated laboratory detection limit

### Groundwater Sample Analytical Results from February 1994 Investigation

Sample Date	Sample ID	TPH as gasoline	B	T	E	X
		-----mg/L-----	-----µg/L-----			
03/03/94	MW-1	23	4,200	2,200	1,400	8,500
	MW-2	0.38*	6.7	<0.5	1.4	2.1
	MW-3	<0.05	<0.5	<0.5	<0.5	<0.5
	MW-4	27	1,400	1,500	920	5,000
	MW-5	<0.05	<0.5	<0.5	<0.5	<0.5

< = Less than indicated laboratory detection limit.  
 \* = The positive result has an atypical pattern for gasoline analysis.

### Groundwater Sample Analytical Results from April/November 2000 Investigation

Sample Date	Sample ID	TPH as gasoline	B	T	E	X	MTBE
		-----mg/L-----	-----µg/L-----				
04/12/00	B-18	62,000	13,000	180	2,500	4,900	1,100
	B-19	830	16	1.1	<0.5	<1.5	100
	B-20	10,000	2,200	<50*	210	<150*	290
11/22/00	MW-6	<50	<0.5	<0.5	<0.5	<1.5	<2.0

< = Less than the indicated laboratory detection limit.  
 \* = High laboratory detection limit due to matrix interference.



## Appendix B - Continued

### Groundwater Sample Analytical Results from August/October 2002 Investigation

Sample ID	Sample Date	TPH as gasoline	B	T	E	X	MTBE
-----µg/L-----							
10/02/02	MW-1	13,000	2,600	<25	680	26	280*
	MW-2	<50	<1.0	<1.0	<1.0	<1.0	1.6
	MW-3	<50	<1.0	<1.0	<1.0	<1.0	<1.0
	MW-4	3,100	75	3.1	6.9	16	260*
	MW-5	<50	<1.0	<1.0	<1.0	<1.0	<1.0
	MW-6	<50	<1.0	<1.0	<1.0	<1.0	<1.0
	MW-7	37,000	9,700	160	3,500	1,000	140
< = Less than the indicated laboratory detection limit. * = Additional fuel oxygenates were detected above the laboratory detection limit, see TTC's October 30, 2002 Summary Report/Quarterly Monitoring Report.							

### Groundwater Sample Analytical Results from October 2003 Investigation

Date	Sample ID	TPH as gasoline	B	T	E	X	MTBE
-----µg/L-----							
10/03/03	B-21	5,600	210	25	1,200	34	900*
10/16/03	MW-8	<50	<1.0	<1.0	<1.0	<1.0	6.9
< = Less than the indicated laboratory test method detection limit. * = tert-amyl methyl ether (TAME) was detected at 60 µg/L.							

### Groundwater Sample Analytical results from March 2004 Investigation

Date	Sample ID	TPH as gasoline	B	T	E	X	MTBE
-----µg/L-----							
03/16/04	B-22	<50	<0.5	<0.5	<0.5	<1.5	<2.5
	B-23	<50	<0.5	0.58	0.62	3.5	<2.5
03/26/04	MW-9	<50	<0.5	<0.5	<0.5	<1.5	<2.5
< = Less than the indicated laboratory test method detection limit.							



## APPENDIX C

### Appendix C - September 2003 and February 2004 CPT Investigation Results

#### Groundwater Sample Results From CPT Borings

Date	Sample ID	TPH as gasoline	B	T	E	X	MTBE
		-----µg/L-----					
09/16/03	CPT-1	560	110	39	21	68	110*
	CPT-2	<50	<1.0	<1.0	<1.0	<1.0	<1.0
< = Less than the indicated laboratory test method detection limit. * = Tert-amyl methyl ether (TAME) was detected at 5.5 µg/L.							

#### Groundwater Sample Results From CPT Borings

Date	Sample ID	TPH as gasoline	B	T	E	X	MTBE
		-----µg/L-----					
02/25/04	CPT-3	<50	<1.0	<1.0	<1.0	<1.0	<1.0
	CPT-4	80*	<1.0	<1.0	<1.0	<1.0	73**
	CPT-5	3,500	2,300	99	58	110	140
< = Less than the indicated laboratory test method detection limit. * = The TPH as gasoline result consists primarily of MTBE ** = tert-amyl methyl ether (TAME) was detected at 4.2 µg/L							



## APPENDIX D





8950 REDWOOD HIGHWAY  
P.O. BOX 793  
NOVATO, CALIFORNIA 94948  
TEL: (415) 892-2851  
FAX: (415) 898-1354

**REDWOOD  
LANDFILL INC.**

**X**

DRIVER'S SIGNATURE

- PERSONS USING THESE PREMISES DO SO AT THEIR OWN RISK
- CHILDREN AND PETS ARE NOT ALLOWED OUT OF VEHICLES
- NO RUMMAGING IN DUMP AREA
- NO SMOKING ON DUMP SITE
- PLEASE NOTIFY OFFICE OF ANY COMPLAINT. THANK YOU.

"By signing, I hereby certify that the below described material (commodity) contains no infectious, radioactive, volatile, corrosive, flammable, explosive, hazardous, dangerous, or toxic materials or substances or any other material that may violate laws or regulations or that may present a significant risk to human health or the environment, cause a nuisance or otherwise create or expose the landfill to liability."

RECIEVED BY: REDWOOD  
SIGNATURE: \_\_\_\_\_  
CUSTOMER: TRANS TECH CONSULTANTS

ACCOUNT NUMBER: 5071841  
VEHICLE: M-M  
COMMODITY: PC DIRT

TIME: 08:54:04  
PER YD.: 14.00  
Cu.yd.: 10.00  
DATE: 12/17/04  
FEE: 140.00  
LOAD #: 571477

SOURCE: 55 COTAFI

\*\*\* CHARGE \*\*\*  
TOTAL: 140.00  
LOAD TICKET #: 1303381

INVOICE

## APPENDIX E

# GROUNDWATER FIELD SAMPLING FORM

1222.01

11-19-04

## WELL INFORMATION

Project Number/Name: 1222.01 Royal Coach Car Wash		Well Number: MW-1D
Project Location: 7360 Commerce Blvd. Cotati, California	Casing Diameter: 2"	Well Depth from TOC (BP): 58.5 Well Depth from TOC (AP):
Date: November 19, 2004	Top of Screen:	Initial Well Depth:
Sampled by (print and sign): Brian Hasik	Product Thickness in inches:	
Notes: slight odor	Water Level from TOC: 15.51	Time: 11:07
	Water Level pre-purge: 15.51	Time: 11:25
	Well Type: <input checked="" type="checkbox"/> Monitor <input type="checkbox"/> Extraction <input type="checkbox"/> Other:	
Well EL (TOC):		Well Mat: PVC

## WEATHER

Wind: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Clouds: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Sun: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Precipitation in last 5 days: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Rain: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Fog: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

## VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING

$$\left( \frac{\text{TD} - \text{WL}}{\text{Dia. Inches}} \right)^2 \times 0.0408 = 6.88 \text{ gallons in one well volume}$$

$$20.6 \text{ gallons in 3 well volumes (Approx. 0.6 gal/ft)} \quad 21 \text{ total gallons purged}$$

## FIELD MEASUREMENTS DURING PURGING

Stable Field Parameters Required Prior to Sample Collection <10% pH and EC change, <0.2°C temp. change

Time	Gallons	pH	TEMP °C	ORP	DO mg/L	EC mS / μS	Turbidity H/M/L
11:32	1	7.31	18.2	83		806.4	L
11:33	3	7.24	18.5	55		831.9	L
11:34	5	7.23	18.4	41		868.8	L
11:36	7	7.17	18.4	24		875.3	L
11:38	10	7.17	18.4	11		876.1	L
11:42	15	7.18	18.4	2		870.6	L
11:44	18	7.09	18.4	-6		874.9	L
11:46	21	7.06	18.4	-14		870.4	L

Minimum of 5 gallons or 0.6 gal/ft. Of water in casing - whichever is greater and field parameters must be stable.

Water Level Before Sampling: 15.25	Time: 1:05
------------------------------------	------------

Appearance of Sample:

Bailer: Disposable Pump: 12V Submersible (1-2 gpm)

DECON. METHOD: TSP or Liquinox (phosphate free) Wash / Double Rinse

NUMBER OF DRUMS GENERATED: Water: 13 Soil: Other:

# GROUNDWATER FIELD SAMPLING FORM

1222.01  
11-10-04

WELL INFORMATION		
Project Number/Name: 1222.01 Royal Coach Car Wash		Well Number: MW-2D
Project Location: 7360 Commerce Blvd. Cotati, California	Casing Diameter: 2"	Well Depth from TOC (BP): Well Depth from TOC (AP): 58.5
Date: November 19, 2004	Top of Screen:	Initial Well Depth:
Sampled by (print and sign): Brian Hasik <i>[Signature]</i>	Product Thickness in inches:	
	Water Level from TOC: 15.00	Time: 11:11
Notes: Slight odor	Water Level pre-purge: 15.12	Time: 12:20
	Well Type: <input checked="" type="checkbox"/> Monitor <input type="checkbox"/> Extraction <input type="checkbox"/> Other:	
	Well EL (TOC):	Well Mat: PVC

WEATHER			
Wind: Yes/No	Clouds: Yes/No	Sun: Yes/No	Precipitation in last 5 days: Yes/No
Rain: Yes/No	Fog: Yes/No		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING	
$\left( \frac{\text{TD} - \text{WL}}{\text{Dia. Inches}} \right)^2 \times 0.0408 = 6.6 \text{ gallons in one well volume}$	
$19.86 \text{ gallons in 3 well volumes (Approx. 0.6 gal/ft)}$	$20 \text{ total gallons purged}$

FIELD MEASUREMENTS DURING PURGING	
Stable Field Parameters Required Prior to Sample Collection <10% pH and EC change, <0.2°C temp. change	

Time	Gallons	pH	TEMP °C	ORP	DO mg/L	EC mS / µS	Turbidity H/M/L
12:34	1	7.86	19.7	-31		953.0	L/M
12:38	3	7.43	19.5	-71		894.8	L/M
12:37	5	7.23	19.4	-86		874.7	L/M
12:38	7	7.29	19.4	-65		872.9	L
12:40	10	7.18	19.4	-69		868.2	L
12:43	15	7.14	19.4	-79		84.8	L
12:44	17	7.25	19.3	-54		84.0	L
12:45	20	7.27	19.4	-40		82.0	L

Minimum of 5 gallons or 0.6 gal/ft. Of water in casing - whichever is greater and field parameters must be stable.

Water Level Before Sampling: 15.14	Time: 1:15
Appearance of Sample:	
Bailer: Disposable	Pump: 12V Submersible (1-2 gpm)
DECON. METHOD: TSP or Liquinox (phosphate free) Wash / Double Rinse	
NUMBER OF DRUMS GENERATED: Water: 13	Soil: Other:



# GROUNDWATER FIELD SAMPLING FORM

1222.01

11.19.04

## WELL INFORMATION

Project Number/Name: 1222.01 Royal Coach Car Wash		Well Number: MW-3D
Project Location: 7360 Commerce Blvd. Cotati, California	Casing Diameter: 2"	Well Depth from TOC (BP): 36.0 Well Depth from TOC (AP):
Date: November 19, 2004	Top of Screen:	Initial Well Depth:
Sampled by (print and sign): Brian Hasik <i>Brian Hasik</i>	Product Thickness in inches:	
	Water Level from TOC: 17.25	Time: 11:16
Notes:	Water Level pre-purge: 17.32	Time: 10:52
	Well Type: <input checked="" type="checkbox"/> Monitor <input type="checkbox"/> Extraction <input type="checkbox"/> Other:	
	Well EL (TOC):	Well Mat: PVC

## WEATHER

Wind: Yes/No <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Clouds: Yes/No <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Sun: Yes/No <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation in last 5 days: Yes/No <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Rain: Yes/No <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Fog: Yes/No <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

## VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING

(     -     ) X (    )<sup>2</sup> X 0.0408 = 6.19 gallons in one well volume  
     TD                      WL                      Dia. Inches

18.57 gallons in 3 well volumes (Approx. 0.6 gal/ft) 20 total gallons purged

## FIELD MEASUREMENTS DURING PURGING

Stable Field Parameters Required Prior to Sample Collection <10% pH and EC change, <0.2°C temp. change

Time	Gallons	pH	TEMP °C	ORP	DO mg/L	EC mS / μS	Turbidity H/M/L
12:02	1	7.31	18.9	23		867.7	L
12:03	3	7.19	18.9	-1		886.3	L
12:04	5	7.17	18.9	-0		903.5	L
12:05	7	7.05	18.6	-6		791.1	L
12:07	10	7.01	18.6	-15		783.1	L
12:10	15	7.02	18.6	-16		778.0	L
12:12	17	7.02	18.5	-12		778.4	L
12:14	20	7.00	18.5	-7		775.6	L

Minimum of 5 gallons or 0.6 gal/ft. Of water in casing - whichever is greater and field parameters must be stable.

Water Level Before Sampling: 17.65	Time: 1:10
Appearance of Sample:	
Bailer: Disposable	Pump: 12V Submersible (1-2 gpm)
DECON. METHOD: TSP or Liquinox (phosphate free) Wash / Double Rinse	
NUMBER OF DRUMS GENERATED: Water: 13	Soil: Other:

## APPENDIX F





Report Date: November 22, 2004

Lee Hurvitz  
Trans Tech Consultants  
930 Shiloh Road, Bldg. 44, Suite J  
Windsor, CA 95492

## LABORATORY REPORT

Project Name: **Royal Coach Car Wash** **1222.01**

Lab Project Number: **4111502**

This 5 page report of analytical data has been reviewed and approved for release.

---

Mark A. Valentini, Ph.D.  
Laboratory Director



### TPH Gasoline & MBTEX in Soil

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
26617	MW-1DA 19'	TPH/Gasoline	ND	1.0
		MTBE	ND	0.025
		Benzene	ND	0.005
		Toluene	ND	0.005
		Ethyl Benzene	ND	0.005
		Xylenes	ND	0.015

Date Sampled: 11/08/04	Date Analyzed: 11/17/04	QC Batch #: 5068
Date Received: 11/15/04	Method: EPA 8015M/8020	

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
26618	MW-2D 19'	TPH/Gasoline	ND	1.0
		MTBE	ND	0.025
		Benzene	ND	0.005
		Toluene	ND	0.005
		Ethyl Benzene	ND	0.005
		Xylenes	ND	0.015

Date Sampled: 11/08/04	Date Analyzed: 11/17/04	QC Batch #: 5068
Date Received: 11/15/04	Method: EPA 8015M/8020	

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
26619	MW-3D 44'	TPH/Gasoline	ND	1.0
		MTBE	ND	0.025
		Benzene	ND	0.005
		Toluene	ND	0.005
		Ethyl Benzene	ND	0.005
		Xylenes	ND	0.015

Date Sampled: 11/05/04	Date Analyzed: 11/17/04	QC Batch #: 5068
Date Received: 11/15/04	Method: EPA 5035/8015M/8020	



---

**Total Lead in Soil**

---

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
26618	<b>MW-2D</b> 19'	<b>Lead (Pb)</b>	<b>3.9</b>	3.0

Date Sampled: 11/08/04	Date Digested: 11/15/04	QC Batch #: 5058
Date Received: 11/15/04	Date Analyzed: 11/16/04	
Method: EPA 3050/6010		



## LABORATORY QUALITY ASSURANCE REPORT

QC Batch #: 5068

Lab Project #: 4111502

Sample ID	Compound	Result (mg/kg)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample #	Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.
26578	CMS	TPH/Gas		NS	
	CMS	Benzene	0.104	0.100	104
	CMS	Toluene	0.105	0.100	105
	CMS	Ethyl Benzene	0.112	0.100	112
	CMS	Xylenes	0.334	0.300	111

Sample #	Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.	RPD
26578	CMSD	TPH/Gas		NS		
	CMSD	Benzene	0.105	0.100	105	1.2
	CMSD	Toluene	0.104	0.100	104	1.8
	CMSD	Ethyl Benzene	0.104	0.100	104	7.8
	CMSD	Xylenes	0.315	0.300	105	5.9

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



QC Batch #: 5058

Lab Project #: 4111502

<u>Sample ID</u>	<u>Compound</u>	<u>Result (mg/kg)</u>
MB	Lead (Pb)	ND

<u>Sample ID</u>	<u>Compound</u>	<u>Result (mg/kg)</u>	<u>Spike Level</u>	<u>% Recv.</u>
LCS	Lead (Pb)	24.9	25.0	99.6

<u>Sample ID</u>	<u>Compound</u>	<u>Result (mg/kg)</u>	<u>Spike Level</u>	<u>% Recv.</u>	<u>RPD</u>
LCSD	Lead (Pb)	25.5	25.0	102	2.2

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery

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110 Liberty Street, Petaluma, CA 94952  
(707) 769-3128  
Fax (707) 769-8093

## CHAIN OF CUSTODY

LAB PROJECT NUMBER: 411502  
TRANS TECH PROJECT NAME: Royal Coach Car Wash

TRANS TECH PROJECT NUMBER: 1222.01

GEO TRACKER EDF: Y X

GLOBAL ID: \_\_\_\_\_

COOLER TEMPERATURE \_\_\_\_\_ °C

COC \_\_\_\_\_

PAGE 1 OF 1

CLIENT INFORMATION		BILLING INFORMATION	
COMPANY NAME: TRANS TECH CONSULTANTS	CONTACT: <u>Mr. Edward Gilmore</u>	CONTACT: <u>Mr. Edward Gilmore</u>	
ADDRESS: 930 SHILOH RD, BLDG 44, STE J	COMPANY NAME: <u>Royal Coach Car Wash</u>	COMPANY NAME: <u>Royal Coach Car Wash</u>	
WINDBORO, CA 95492	ADDRESS: <u>27 Rancheria Rd</u>	ADDRESS: <u>27 Rancheria Rd</u>	
CONTACT: <u>Lee Hurvitz</u>	PHONE: <u>(707) 575-8622</u>	PHONE: <u>(707) 575-8622</u>	
FAX #: <u>(707) 837-7334</u>	FAX #: _____	FAX #: _____	

ITEM	CLIENT SAMPLE I.D.	DATE SAMPLED	TIME	MATRIX	# CONT.	PRESV. YES/NO	ANALYSIS													COMMENTS	LAB SAMPLE #
							TPH/ASTEX EPA 8015M/8020	TPH DIESEL / MOTOR OIL EPA 8015M	VOLATILE HYDROCARBONS EPA 8260 (FULL LIST)	BTX & OXYGENATES + PS SCAVENGERS EPA 8260B	OXYGENATED FUEL ADDITIVES EPA 8260M	CHLORINATED SOLVENTS EPA 8015 / EPA 8260B	SEMI-VOLATILE HYDROCARBONS EPA 8270	TPH / TOC SM 8030F / EPA 418.1M	PESTICIDES / PCB'S EPA 8081 / 8141 / 8082	CAN 17 METALS / 6 LIGHT METALS	TOTAL LEAD				
1	MW-1DA-47	11/26/94	9:45	S	1	N	X													26617	
2	MW-2D-47	11/26/94	3:40	S	1	N	X												X	26618	
3	MW-3D-44	11/15/94	9:20	S	4	N	X													EPA 5035 26619	
4	MW-3D-48	11/15/94	9:30	S	1	N														hold 26620	
5																					
6																				5030 p.m. 20 26621	
7																					
8																				by 45 (3) 26622	
9																					
10																					
11																					

SIGNATURES	
RELINQUISHED BY: <u>Lee Hurvitz</u>	SAMPLED BY: <u>Lee Hurvitz</u>
SIGNATURE: <u>[Signature]</u>	DATE: <u>11/15/94</u>
	DATE: <u>11/15/94</u>
	DATE: <u>10:47 AM</u>





Report Date: November 22, 2004

Lee Hurvitz  
Trans Tech Consultants  
930 Shiloh Road, Bldg. 44, Suite J  
Windsor, CA 95492

## LABORATORY REPORT

Project Name: **Royal Coach Car Wash** **1222.01**

Lab Project Number: **4111203**

This 3 page report of analytical data has been reviewed and approved for release.

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Mark A. Valentini, Ph.D.  
Laboratory Director



### TPH Gasoline & MBTEX in Soil

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
26574	MW-1D-49'	TPH/Gasoline	ND	1.0
		MTBE	ND	0.025
		Benzene	ND	0.005
		Toluene	0.014	0.005
		Ethyl Benzene	ND	0.005
		Xylenes	0.016	0.015

Date Sampled: 11/08/04	Date Analyzed: 11/16/04	QC Batch #: 5068
Date Received: 11/12/04	Method: EPA 5035/8015M/8020	

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
26576	MW-3D-19'	TPH/Gasoline	ND	1.0
		MTBE	ND	0.025
		Benzene	ND	0.005
		Toluene	0.013	0.005
		Ethyl Benzene	ND	0.005
		Xylenes	0.015	0.015

Date Sampled: 11/08/04	Date Analyzed: 11/16/04	QC Batch #: 5068
Date Received: 11/12/04	Method: EPA 5035/8015M/8020	

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
26577	MW-2D-40'	TPH/Gasoline	2.4	1.0
		MTBE	ND	0.025
		Benzene	1.0	0.005
		Toluene	0.030	0.005
		Ethyl Benzene	0.17	0.005
		Xylenes	0.047	0.015

Date Sampled: 11/08/04	Date Analyzed: 11/16/04	QC Batch #: 5068
Date Received: 11/12/04	Method: EPA 5035/8015M/8020	



## LABORATORY QUALITY ASSURANCE REPORT

QC Batch #: 5068

Lab Project #: 4111203

Sample ID	Compound	Result (mg/kg)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample #	Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.
26578	CMS	TPH/Gas		NS	
	CMS	Benzene	0.104	0.100	104
	CMS	Toluene	0.105	0.100	105
	CMS	Ethyl Benzene	0.112	0.100	112
	CMS	Xylenes	0.334	0.300	111

Sample #	Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.	RPD
26578	CMSD	TPH/Gas		NS		
	CMSD	Benzene	0.105	0.100	105	1.2
	CMSD	Toluene	0.104	0.100	104	1.8
	CMSD	Ethyl Benzene	0.104	0.100	104	7.8
	CMSD	Xylenes	0.315	0.300	105	5.9

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



# CHAIN OF CUSTODY

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Fax (707) 769-8093



LAB PROJECT NUMBER: 411203  
TRANS TECH PROJECT NAME: Royal Coast Car Wash  
TRANS TECH PROJECT NUMBER: 1222-01  
TURNAROUND TIME (check one)  
MOBILE LAB ☐ 24 HOURS ☐  
SAME DAY ☐ 72 HOURS ☐  
48 HOURS ☐ NORMAL ☒ 5 DAYS ☐  
GEO TRACKER EDF: XY ☒  
GLOBAL ID: 1222-01  
COOLER TEMPERATURE:        °C  
COC:       

BILLING INFORMATION  
CONTACT: Mr. Edward G. Galt  
COMPANY NAME: Royal Coast Car Wash  
ADDRESS: 27 Peninsula Rd  
Kennett Ct  
PHONE#:         
FAX #:       

CLIENT INFORMATION  
COMPANY NAME: TRANS TECH CONSULTANTS  
ADDRESS: 930 SHILOH RD. BLDG 44, STE J  
WINDSOR, CA 95492  
CONTACT: Lee Hurwitz  
PHONE: (707) 575-8622  
FAX #: (707) 837-7334

ITEM	CLIENT SAMPLE I.D.	DATE SAMPLED	TIME	MATRIX	# CONT.	PRESV. YES/NO	THINGS TO DO EPA 8015M/8020 & MTR	TPH DIESEL / MOTOR OIL EPA 8015M	VOLATILE HYDROCARBONS EPA 8260 (FULL LIST)	BTX & OXYGENATES EPA 8260 (FULL LIST)	OXYGENATED FUEL ADDITIVES EPA 8260M	CHLORINATED SOLVENTS EPA 8019 / EPA 8260B	SEMIVOLATILE HYDROCARBONS EPA 8270	TPH / TOC SM 5520F / EPA 410.1M	PESTICIDES / PCB'S EPA 8081 / 8141 / 8082	CAN 17 METALS / 3 LUT METALS	TOTAL LEAD	COMMENTS	LAB SAMPLE #
1	MW-1DA-9	11/26/94	9:30	S	4	Y	X											Hold	26573
2	MW-1D-41	11/26/94	2:15	S	4	Y	X											Hold	26574
3	MW-2D-95	11/26/94	3:30	S	4	Y	X												26575
4	MW-2D-19	11/26/94	8:43	S	4	Y	X												26576
5	MW-2D-40	11/26/94	9:45	S	4	Y	X												26577
6																			
7																			
8																			
9																			
10																			
11																			

SIGNATURES  
RELINQUISHED BY: Lee Hurwitz SAMPLED BY: Lee Hurwitz  
DATE: 11/26/94 11:07 DATE: 11/26/94 11:07  
SIGNATURE:        SIGNATURE:



Report Date: November 30, 2004

Lee Hurvitz  
Trans Tech Consultants  
930 Shiloh Road, Bldg. 44, Suite J  
Windsor, CA 95492

## LABORATORY REPORT

Project Name: **Royal Coach Car Wash** **1222.01**

Lab Project Number: **4111904**

This 8 page report of analytical data has been reviewed and approved for release.

---

Mark A. Valentini, Ph.D.  
Laboratory Director



### TPH Gasoline in Water

<u>Lab #</u>	<u>Sample ID</u>	<u>Analysis</u>	<u>Result (ug/L)</u>	<u>RDL (ug/L)</u>
26696	MW-1D	TPH/Gasoline	57	50

Date Sampled: 11/19/04	Date Analyzed: 11/19/04	QC Batch #: 5082
Date Received: 11/19/04	Method: EPA 5030/8015M	

<u>Lab #</u>	<u>Sample ID</u>	<u>Analysis</u>	<u>Result (ug/L)</u>	<u>RDL (ug/L)</u>
26697	MW-2D	TPH/Gasoline	1,600	50

Date Sampled: 11/19/04	Date Analyzed: 11/19/04	QC Batch #: 5082
Date Received: 11/19/04	Method: EPA 5030/8015M	

<u>Lab #</u>	<u>Sample ID</u>	<u>Analysis</u>	<u>Result (ug/L)</u>	<u>RDL (ug/L)</u>
26698	MW-3D	TPH/Gasoline	ND	50

Date Sampled: 11/19/04	Date Analyzed: 11/19/04	QC Batch #: 5082
Date Received: 11/19/04	Method: EPA 5030/8015M	





### Volatile Hydrocarbons by GC/MS in Water

Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
26696	MW-1D	benzene	ND	1.0
		toluene	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		o-xylene	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		1,2-dichloroethane (EDC)	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	18	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	1.1	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.5	97.5	70 – 130
toluene-d <sub>8</sub> (20)	19.9	99.5	70 – 130
4-bromofluorobenzene (20)	19.5	97.5	70 – 130

Date Sampled: 11/19/04	Date Analyzed: 11/22/04	QC Batch #: 5085
Date Received: 11/19/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
26697	MW-2D	benzene	53	1.0
		toluene	3.4	1.0
		ethyl benzene	87	1.0
		m,p-xylene	8.5	1.0
		o-xylene	8.4	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		1,2-dichloroethane (EDC)	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	43	25
methyl tert-butyl ether (MTBE)	110	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	6.6	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.5	97.5	70 – 130
toluene-d <sub>8</sub> (20)	19.4	97.0	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130

Date Sampled: 11/19/04	Date Analyzed: 11/22/04	QC Batch #: 5085
Date Received: 11/19/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
26698	MW-3D	benzene	ND	1.0
		toluene	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		o-xylene	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		1,2-dichloroethane (EDC)	ND	1.0

**Oxygenated Gasoline Additives**

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	84	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	5.9	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.5	97.5	70 – 130
toluene-d <sub>8</sub> (20)	19.7	98.5	70 – 130
4-bromofluorobenzene (20)	19.7	98.5	70 – 130

Date Sampled: 11/19/04	Date Analyzed: 11/22/04	QC Batch #: 5085
Date Received: 11/19/04	Method: EPA 8260B	



## LABORATORY QUALITY ASSURANCE REPORT

QC Batch #: 5082

Lab Project #: 4111904

Sample ID	Compound	Result (ug/L)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.
26682	CMS	TPH/Gas		NS	
	CMS	Benzene	9.31	10.0	93.1
	CMS	Toluene	8.94	10.0	89.4
	CMS	Ethyl Benzene	8.99	10.0	89.9
	CMS	Xylenes	28.2	30.0	94.1

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.	RPD
26682	CMSD	TPH/Gas		NS		
	CMSD	Benzene	9.58	10.0	95.8	2.9
	CMSD	Toluene	9.08	10.0	90.8	1.6
	CMSD	Ethyl Benzene	9.16	10.0	91.6	1.9
	CMSD	Xylenes	28.5	30.0	95.2	1.1

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



QC Batch #: 5085

Lab Project #: 4111904

Sample ID	Compound Name	Result (ug/L)
MB	1,1-dichloroethene	ND
MB	benzene	ND
MB	trichloroethene	ND
MB	toluene	ND
MB	chlorobenzene	ND

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.0	95.0	70 - 130
toluene-d <sub>8</sub> (20)	18.4	92.0	70 - 130
4-bromofluorobenzene (20)	20.0	100	70 - 130

Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.
26685	CMS	1,1-dichloroethene	24.7	25.0	98.8
	CMS	benzene	24.2	25.0	96.8
	CMS	trichloroethene	22.5	25.0	90.0
	CMS	toluene	23.9	25.0	95.6
	CMS	chlorobenzene	24.5	25.0	98.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.7	98.5	70 - 130
toluene-d <sub>8</sub> (20)	19.5	97.5	70 - 130
4-bromofluorobenzene (20)	19.7	98.5	70 - 130



Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.	RPD
26685	CMSD	1,1-dichloroethene	23.3	25.0	93.2	5.8
	CMSD	benzene	23.9	25.0	95.6	1.2
	CMSD	trichloroethene	22.5	25.0	90.0	0.0
	CMSD	toluene	23.5	25.0	94.0	1.7
	CMSD	chlorobenzene	24.7	25.0	98.8	0.81

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.4	97.0	70 – 130
toluene-d <sub>8</sub> (20)	19.6	98.0	70 – 130
4-bromofluorobenzene (20)	19.1	95.5	70 – 130

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



# CHAIN OF CUSTODY

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(707) 769-3128  
Fax (707) 769-8093



<b>CLIENT INFORMATION</b>		<b>BILLING INFORMATION</b>	
COMPANY NAME: TRANS TECH CONSULTANTS	CONTACT: Peggy Gilmoro	TRANS TECH PROJECT NAME: Royal Carls Can Lab	LAB PROJECT NUMBER: 4111904
ADDRESS: 930 SHILOH RD, BLDG 44, STE J	COMPANY NAME: Royal Carls Can Lab	TRANS TECH PROJECT NUMBER: 1222-01	
WINDSOR, CA 95492	ADDRESS: 240 Riverside Pl	TURNAROUND TIME (check one)	
CONTACT: Lee Huvitz	PHONE#: (707) 575-8622	MOBILE LAB	
PHONE#: (707) 837-7334	FAX #: (707) 837-7334	SAME DAY	24 HOURS
		48 HOURS	72 HOURS
		5 DAYS	NORMAL

ANALYSIS																				
ITEM	CLIENT SAMPLE I.D.	DATE SAMPLED	TIME	MATRIX	# CONT.	PRESV. YES/NO	TPH/GAS/PAH/PCB	EPA 8014/M/8020	TPH CRESOL / MOTOR OIL EPA 8010M	VOLATILE HYDROCARBONS EPA 8260 (FULL LIST)	BTEX & OXYGENATES + PB SCAVENGERS EPA 8210B	OXYGENATED FUEL ADDITIVES EPA 8260M	CHLORINATED SOLVENTS EPA 8010 / EPA 8260B	SEMI-VOLATILE HYDROCARBONS EPA 8270	TPH / TOG SM 6520F / EPA 410.1M	PESTICIDES / PCB'S EPA 8061 / 8141 / 8082	CAN 17 METALS / 6 LUFT METALS	TOTAL LEAD	COMMENTS	LAB SAMPLE #
1	MW-1D	11/19	105	W	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	24696
2	MW-2D	11/19	115	W	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	24697
3	MW-3D	11/19	110	W	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	24698
4																				
5																				
6																				
7																				
8																				
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10																				
11																				

SIGNATURES	
RELINQUISHED BY:	SAMPLED BY:
SIGNATURE	SIGNATURE
DATE	DATE
11/19/04	11/19/04
TIME	TIME
2:02	2:02
RECEIVED BY LABORATORY:	
DATE	
11/19/04	
TIME	
1402	



**DISTRIBUTION LIST**

Results of Investigation/ Additional Monitoring Wells  
7360 Commerce Boulevard  
Cotati, California  
January 10, 2004  
Job No. 1222.01

Mr. Dale Radford  
Sonoma County Department of Health Services  
Environmental Health Division  
3273 Airway Drive, Suite D  
Santa Rosa, California 95403-2097

North Coast Regional Water  
Quality Control Board  
5550 Skylane Boulevard, Suite A  
Santa Rosa, California 95403

